THE

WESTERN JOURNAL

OF

MEDICINE AND SURGERY.

FEBRUARY, 1844.

ART. I.—*On a Ferruginous preparation, termed, vulgarly, "Clinkers," in certain Diseases.* By W. S. McMURTRY, M.D., of Benton, Miss. Being an Inaugural Dissertation, submitted to the President, Managers and Faculty of the Medical Institute of Louisville, for the degree of M.D. March, 1843.

In the march of investigation one fact of great value and interest has been ascertained and settled—that nature, by the operation of a few laws and a few agents, a few simple means, brings about an immense variety of important results. A knowledge of this fact is of the greatest importance to the philosopher, as it teaches him when new phenomena are discovered, not to seek for new laws and new agents as means of explanation, but if possible, to refer them to the combined operation of laws and agents already known. Thus

we are frequently astonished after long research and investigation, to find at last that one or two simple truths explain the whole of a great number of phenomena which had been before entirely unintelligible. And still more are we astonished that these simple principles, which appear almost self-evident, should have been so long unknown. When a principle is once known it is difficult to say to what results it may lead.

Thus, the investigation of the cause of the contractions in the muscles of the leg of a frog, under peculiar circumstances, has led to the discovery of Dynamic Electricity with all its wonderful effects. The same great principle is exhibited in numberless other cases. Among these, none is more admirable than the great variety of important purposes to which the various forms of Iron may be applied. I shall not stop to enumerate its application in the arts, but proceed at once to the subject of this paper—the remedial virtues of one of the forms of this metal. No class of remedies is more interesting on account of their active and varied properties than the chalybeates. This class furnishes tonics, laxatives, anthelmintics and astringents,—in all cases giving tone to the digestive apparatus and invigorating the whole system, as well as exhibiting the specific effects of each particular preparation.

The pharmaceutic preparations of iron are rapidly increasing in number. Modern chemistry has furnished us with several preparations of this metal, the properties of which are exceedingly interesting and valuable. I propose, however, to treat more particularly of a preparation which has been but lately introduced to our notice, and has received but little attention from the profession at large. It is not very strange that it should have been so long overlooked, for its external appearance is any thing but attractive, and one would be as apt to suspect almost any thing else of possessing valuable properties as this. I allude to what in the manufacturing districts of England is called "*Clinkers*," which are nothing more than the scoriæ produced in the smith's forge by the fusion of aluminous earth and other impurities with a small portion of

iron. In what state the constituents of this compound exist is not known. Some have supposed from its appearance and external hardness that the metal becomes steel during the process of fusion with the clay; but this is uncertain, as no analysis of it has ever been made upon which reliance can be placed. Possibly it may contain some peculiar chemical compound upon which its valuable properties depend.

For the first notice of this article we are indebted to Dr. C. J. Edwards, of Bath, who, in the Provincial Medical and Surgical Journal, of February 5th, 1842, has given us some account of its properties and uses in the cure of cachectic diseases.

In the districts mentioned, the clinkers have been long used by "knowing old women," as a remedy in chlorotic disorders, and with such uniform success as to have obtained for the medicine the title of "specific."

The following is the mode of preparing it:—The bluest and heaviest pieces should be selected from the mass; that which is of a light color and less ponderous, being entirely inert and useless. Being carefully selected, it is to be finely levigated, which, by the way, is a work of great difficulty, owing to its extreme hardness and metalloid character. Any quantity of this powder may be mixed with a sufficient amount of molasses to form a stiff paste—to every eight ounces of this mass, half an ounce of magnesia and an equal quantity of ginger must be added. The mass thus formed is any thing but inviting to the eye, but its appearance may be improved by using honey instead of molasses, and adding a small quantity of peroxide of iron to the compound. The *modus operandi* of the magnesia and ginger is sufficiently evident. It may be well to observe, however, that unless the ginger, or some other stomachic, be combined with it, griping pains in the bowels are very apt to be produced by its use.

The directions for administering it are quite as unique as the formula for its preparation. It must be taken twice a day—morning and night—for three successive days, and then omitted for a like period; and so continued until the course

that has been decided upon has been finished. The dose is a tea-spoonful. Absurd as these directions seem, they are not without their value; for experience has proved that constitutional irritation supervenes, unless some decided interval is allowed, at stated periods, during a course of this remedy.

Dr. Edwards first tested its powers in a number of patients in whom the exsanguineous state of the skin, and wasting of the muscular fibre, were indicative of the morbid manner in which the functions of the stomach, alimentary canal, and uterus, were carried on. Within a month from commencing the use of the clinkers a striking improvement took place in the appearance of the patients, and before the expiration of two months, every unfavorable symptom disappeared. One case in particular is well worthy of especial notice, on account of the scrofulous condition of the submaxillary glands, and the ulcerated state in which one of them had been for several years; this healed during the use of the new medicine.

"I may observe, en passant," says Dr. E., "that previous to the trial of the clinkers, this young woman had been under professional treatment for some time without deriving any benefit from it. The pulse was weak and nearly 100; catamenia irregular in appearance, variable in quantity, and unnatural in composition; tongue foul, and what perhaps may be termed hysterical hypochondriasis existed to a great degree. A gentle cathartic, of infusion of senna, with tartrate of potash, was given for a few successive days before the clinkers were commenced. She had not taken the new medicine six weeks when most of the distressing symptoms disappeared, and her personal appearance became so improved, that her friends scarcely recognized in the ruddy girl before them, the pallid and unhealthy creature she once had been."

It appears greatly to benefit cases of simple indigestion, a few doses being capable of removing the most distressing symptoms. In that peculiar condition of the secretion from the bowels which is said to favor the formation or propagation of worms, it has proved advantageous in two ways—one by

its mechanical action, the other by its tonic properties. This was an accidental discovery made during its trial in a case of leucorrhœa.

When the medicine is taken for the first time, a train of symptoms frequently supervenes which would induce a stranger to its effects to regard it as a dangerous compound. A great weight is felt in the epigastric region, accompanied by a burning sensation in the stomach; sensations of sickness, followed by those of fainting, come on; these are soon relieved by eructations of flatus. Some complain of pains in the limbs, particularly in the joints, others of tightness across the forehead, with giddiness, while all are troubled with heat, dryness of the mouth, and great thirst. At the second dose these symptoms are moderated, and the third is generally taken without any unpleasant feeling. After it has been persevered in for a short time, sensations of a different character arise; these are hunger, and a feeling of health and energy to which, perhaps, the patient has been a stranger for many years; then the complexion, if pale, commonly receives a ruddy tint, and the muscular fibre becomes firm and enlarges. After the first dose the fæces are like pitch, the urine generally pale and large in quantity; the bowels, if previously costive, become regular in their action; the pulse increases in volume, and the skin is pleasantly relaxed. To sum up its medicinal properties;—it may be said that the clinkers are tonic, stimulant, anthelmintic, and colorific, adapted generally to leucophlegmatic habits, and especially to female diseases, where a chlorotic condition of the constitution prevails.

My attention being called to this article by the high encomiums of Dr. E., I determined, during the last summer, to test its virtues. Not having many suitable cases in my own practice, I requested several of my medical friends to give it a trial; and as the result of these experiments I can say, that the clinkers promise to be one of the most valuable chalybeate preparations belonging to the Materia Medica, when its properties and uses shall have been thoroughly ascertained.

It seems to be particularly adapted to all cases where de-

bility of the intestinal tube, and constipation of the bowels exist, on account of its laxative properties. In all cases where I have used it, or known it to be used, it has kept the bowels gently open, even where the most obstinate constipation had previously prevailed. But it may be used as a most valuable tonic in cases accompanied with diarrhœa, by combining it with some astringent medicine. In one case of indigestion accompanied by diarrhœa of long standing, produced by dissipation, it was used in combinanation with catechu, with marked benefit; so much so, that I have been written to for the prescription, since my arrival at this place. It appears to me that most of the unpleasant effects arising from its use, mentioned by Dr. Edwards, might be obviated by properly regulating the dose, and combining it with other articles to suit each particular case. At least, I have not witnessed the disagreeable effects which he mentions. Doubtless, as in all cases where powerful remedies are employed, a proper discrimination is required in its use.

It may be exhibited according to the directions already given, or it may be administered in doses of from 20 to 40 grains, in molasses, or syrup, or any other adhesive vehicle; and should be always combined with some stomachic if it be not contra-indicated.

I have used it in several cases where a laxative and tonic were required, and always with the happiest effects—the greatest objection to the article being the unpleasant, gritty taste which it leaves in the mouth, owing to the difficulty of reducing it to an impalpable powder.

The following cases were furnished me by my friend, Dr. Sharp, who made trial of the article at my suggestion:

Case I.—A girl, about 12 years of age, had been in bad health for two years, supervening upon a badly cured intermittent fever. Countenance sallow; eye-lids œdematous; lips very pale; tongue presented a flabby and exsanguineous appearance; abdomen very much swollen; little appetite; digestion bad; bowels seldom moved without cathartic medicine; feet and legs œdematous; pulse 120 and weak. She

had a paroxysm of fever every 24 hours, preceded by a chill. This patient had been confined to the house for two years, during which time she had been treated by several physicians without benefit.

The pulverized clinkers were given to her in 20 grain doses, three times a day, in a table-spoonful of honey. This was continued about six weeks, when the rosy hue had returned to her cheeks and prolabia, the œdema and abdominal swelling had subsided; her appetite was good and bowels regular.

After this, the medicine was continued in 5 grain doses, three times a day, for three months, at the expiration of which time she was so far recovered as to be able to go to school.

Case II.—A negro woman, aged 35, had given birth to her last child 14 years previously, from which time she had been afflicted with leucorrhœa; discharge profuse, purulent and greenish; considerable pain in the lumbar region and uterus at times; just able to walk, except about her monthly periods, when she was confined to her bed; menses small in quantity; leucorrhœal discharge more profuse at these periods, and frequently so acrid as to excoriate the parts with which it came in contact; hysterical symptoms; headache, with occasional giddiness; pulse 90 and weak; such enlargement of the abdomen that she had the appearance of a woman in the latter months of pregnancy; countenance pallid; general debility; tongue pale, flabby, and loaded with a thick fur; appetite bad and capricious; sour stomach, with great desire for antacids; bowels constipated, seldom moved unless by a cathartic; sleep disturbed and not refreshing. Being a favorite servant, the skill of a great many physicians had been exhausted upon her, but without affording her any relief.

She was put upon the clinkers according to the original recipe, except the ginger and magnesia, which were omitted. For three weeks the symptoms were aggravated by the use of the remedy. The bowels were moved very freely, showing the necessity of intermitting its use; the discharge from the vagi-

na was also increased, and more offensive. In a word, she thought herself getting much worse. After this she commenced improving rapidly, the enlargement of the abdomen subsiding, and all the other symptoms improving. In a very short time she was so far recovered as to become pregnant, which had not happened before, during the fourteen years of her illness.

In all probability, the unpleasant purging in this case would not have occurred if the medicine had been given at longer intervals, or in smaller doses.

Case III.—A lady, 26 years of age, had been afflicted with leucorrhœa for several years occasionally, but she had borne children in the mean time. For the last three months before I saw her, the discharge had been much increased. In addition to this, she was greatly harrassed with what she represented to be boils, about the size of a hickory-nut, located on the external labia and perineum—one crop of two or three would make their appearance, and as they declined be followed by another; she was very much debilitated by the irritation thus constantly kept up; bowels constipated; considerable distension of the abdomen; pulse weak and frequent; tongue flabby and loaded with a yellow fur; no appetite; acidity of the stomach; headache, with occasional giddiness and blindness; pain in the lumbar region, also in the right side, extending to the shoulder; urine high colored and scanty.

A tea-spoonful of the powdered clinkers in a little honey was ordered three times a day, with intermissions, as already mentioned. Cooling lotions were applied to the boils.

She commenced improving immediately, and in the course of a month was entirely cured.

Dr. Sharp informed me that he had used this remedy in several other cases, where a tonic was required, with marked benefit, and never with any unpleasant consequences; it always operating *gently* upon the bowels, except in the case of the negro woman, whose case has been detailed, in which instance it purged powerfully.

Louisville, March, 1843.

ART. II. *Remarks on the Diseases which prevail in Tennessee during Summer and Winter.* By JOHN W. RICHARDSON, M. D., of Rutherford County, Tenn.*

The diseases of our climate may be divided into two great classes; namely, into Summer and Winter complaints. The chylopoietic viscera, as a general rule, suffer primarily in those of the hot season, as the lungs, the serous and fibrous membranes, are the parts which are most apt to take on disease in the cold season. The diseases of spring are generally a complication of those peculiar to the winter, with some resemblance to those of the warm season; and the diseases of autumn partake much of the character of those of the summer preceding, and, when they continue late, run into the diseases of winter.

Cholera morbus, fluxes of various kinds, gastritis, enteritis, hepatitis, and similar affections, make up the large catalogue of Summer diseases; and they are almost always produced by irregularities, and imprudence in diet or drink; or by exposure to a cool and damp atmosphere, by which the cutaneous secretion is suspended, and the equilibrium of the fluids destroyed. Another great cause of disease is exposure to the sun. The hot season of itself predisposes to the diseases above enumerated, by producing a continued stimulation of the capillary vessels, until they become debilitated by over excitement. The nervous filaments are also debilitated from the same cause—a general *malaise*, with weakness and trembling ensue—a centripetal action is given to all the fluids in a slow and almost imperceptible manner, or else some excitant being thrown into the stomach in the form of indigestible food, acts as an irritant and induces disease rapidly.

*Dr. Richardson, as Orator of the Medical Society of Tennessee, read this paper at the meeting of the Society, in May last. In publishing it, we have felt it due to its intelligent author to omit those passages of a popular character which were designed especially for the members of the Society, and for the region in which the address was delivered, but which could not be expected to interest the readers of our Journal.

The most remarkable evidence of disease is the broken balance of the circulation. The equilibrium is destroyed and the burden falls upon the internal organs. Vomiting frequently comes on at this point, and if the malign cause has done no more than simply irritate the stomach, the vomiting ejects the offending substances, an equilibrium is again partially or entirely restored, and, if the patient keep his stomach empty, for a few hours, he gets well. And it is a remarkable fact that those very articles which act as irritants on our stomachs in summer, can be taken with perfect safety in winter. Is it not altogether probable that the process of respiration in cold weather prevents such substances from exerting any deleterious effect upon us? There seems, in fact, to be an absolute necessity for the very articles in winter which we cannot use with impunity in summer. This appears to have some relation to the respiratory function; in other words, to the consumption of oxygen, which is greater in cold than in warm weather. If we may rely upon the facts and reasonings of Professor Liebig, a close connection exists between the quantity of oxygen respired, and the amount of food requisite to maintain the heat and the health of the animal, and a solution is afforded of the well-known fact, that the process of digestion is most vigorous in cold climates and a low atmospherical temperature.

The disease of the greatest moment, and the one which attracts our attention more than any other in summer, is *Fever*. This malady, whose protean forms have excited the curiosity of every man, whose peculiar location has evaded the search of the most diligent, and whose dreadful ravages have baffled the skill of the most learned, still remains a subject of controversy. Fevers exist in every season, and it is very strange to me that fever in the summer and autumn should be called *the* fever, while the same disease in winter should be expressed by some other name; or rather, it is more strange, that fever in the winter should be correctly defined, while fever in the summer is not defined at all. For I affirm, that the article *the*, although used especially to define some particular thing, does

not define anything when applied as it commonly is to fever But I may be told we do understand the form of fever when it is defined by the article the. I answer, we do not. Nor can any man prescribe correctly for "the fever." He must first inquire for the symptoms, if he be absent; or, if he be present with the patient, he must examine for himself before he can prescribe correctly.

It is true, the expression, "the fever," usually produces in our minds an association of symptoms which have been generated there by education and observation; but how often is it the case that so much dissimilarity exists, not only in the fevers of different seasons, but also in the fevers of the same season, in different locations, and even in members of the same family, that we cannot prescribe for every case correctly, unless we first see and examine each individual patient. It is very true that many physicians look on every case of fever, arising in the "fever season," as being produced by the same cause, and therefore conclude that the same organs must necessarily be primarily affected, and that a routine practice may be pursued; than which conclusion nothing is more fallacious in theory, or more disastrous in practice.

What gives the peculiarity to fevers? We answer that the season of the year in which the fever arises gives it its greatest peculiarity. Certain seasons, and their vicissitudes predispose certain organs to disease, and it is the disease of those organs which characterises the form of fever. Why, then, are the fevers of the hot season different from those of the cold? We answer, because different organs and tissues predominate in point of disturbance, and give rise to a particular class of symptoms, which in the aggregate are denominated "the fever;" but which require in different cases a modified plan of treatment.

The main question, however, and the one of most difficulty for us to determine is this: *which are the organs most predisposed to disease*, in differsent seasons, *and why are they so predisposed?* As a line of separation can be easily drawn by the close observer between the diseases of the hot and cold sea

son, we shall proceed to speak particularly of them; and first, of those peculiar to summer.

As already remarked, the diseases of summer are seated in, and produced primarily by derangement of, some one or more of the chylopoietic viscera, at the head of which stands the stomach. The second in importance is the small portion of the intestinal canal; the third is the liver. And we doubt very much whether there ever was, or ever can be, a summer disease in which one or the other, or all three of these organs are not primarily involved. True, the predisposing cause may operate upon some other part of the system before these viscera are implicated. If, indeed, we except the stomach, which is sometimes promptly disordered by ingesta, the action of the malign cause can never be exerted directly on either of those organs. But that it is in one, or more of them, that the force of the malign cause is spent, and from which all or the most of the morbid effects are radiated, is, we think, entirely demonstrable. And it is also true, that often before we can discover any sign of disease in either of those organs, the whole system has been convulsed by an ague, which is followed by considerable arterial excitement, and all the pains and aches belonging thereto; but in a short time the system relieves itself from this condition, and unless the predisposing cause continue to operate, or the morbid action which was first induced thereby has produced some point of disease, which becomes now of itself a cause, the patient is nearly well. If the predisposing cause be removed, or the patient be removed from its influence, unless some local, organic disease has been induced, the fever will subside of itself.

But in many instances, in summer, we see great derangement of those organs in which the arterial system does not for a time, perhaps not at all, participate, until from considerable ravages every part of the system is affected. And no man pretends to call such cases *fever*. Vomiting, diarrhœa, and cholera morbus are frequent diseases of summer, and how often is it the case that they pass off without inducing a febrile paroxysm? and how often, too, do they usher in the very

worst forms of fever? No man can tell whether such a case will terminate in fever. If arterial excitement be superadded to the other symptoms, we call the complaint fever; and here I will remark that the cases which most perplex the physician are those in which a deranged condition of the circulation persists after he has, as he imagines, removed every local cause. But we may be asked, may not this deranged circulation be dependent upon disease of the membrane lining the heart and arteries? We answer yes; and it is upon the correct settlement of this question, in such cases, that will depend the fate of our patient. Memory recalls to my mind some cases of this kind, where the deranged circulation was attributed to an improper source. The *liver* is often charged with it, and a system of purgation is adopted, which, instead of relieving the patient, actually leads to his death. Or this quick, irritable, small pulse, as it is called, may have been produced by improper purging, in the first instance, causing a highly irritated or inflamed condition of the small bowels, in which case the continued use of cathartics will aggravate instead of relieving the symptoms.

The temperature of the summer season is the great predisposing cause of disease. The atmosphere in the hot season becomes warmer and thinner; the whole exterior man is exposed to the increased temperature through the dermoid covering, in which are ramified a large part of the blood vessels belonging to the systemic circulation, and also a proportional part of the nerves. The capillary system of the smaller circulation and its concomitant nerves are also directly exposed to the atmosphere by their ramification through the lungs. Through these two media then, the skin and the lungs, we are directly exposed to the temperature which is peculiar to each season, and also to the vicissitudes of the seasons themselves. It is easy to conceive that some change—some abnormal condition, must be produced in the human system thus exposed.

The transition is often sudden, from heat during the day to a cold damp atmosphere at night. The high temperature causes the capillary vessels to dilate, and also highly excites

the nervous filaments; in consequence of which, the blood flows freely to the surface. The low temperature has precisely the contrary effect: the capacity of the capillary vessels is decreased, sometimes very rapidly; centripetal action is given to the fluids, and the internal vessels receive a surplus; plethora of one or more organs is the result, and unless they relieve themselves by increased secretion, as the skin did in the former case, disease is the inevitable consequence. This plethora, or congestion, as it is usually termed, is generally induced in some of the abdominal organs, and the reason why disease is generated in them rather than in the lungs during hot weather is, simply, that the capillary system of the lungs is operated on immediately, and influenced by the same causes and in the same manner that the capillary system of the larger circulation is through the skin; both systems being similarly affected by temperature and its changes. And it is fortunate for us that this is the case, for if the capacity of the pulmonic capillaries could not be increased by temperature, we should be exposed to a class of diseases at a season of the year when, of all others, they would be the most unmanageable, because they would be complicated with chylopoietic derangement. Every practitioner is acquainted with the difficulty of treating thoracic inflammations, especially of the lungs, when they are complicated with irritation or inflammation of the stomach, bowels, or liver. But, fortunately, the most acute, rapid, and dangerous inflammations of the lungs occur at a season of the year when the chylopoietic organs are less liable to take on disease, and we have a single and simple malady to treat.

When the equilibrium is destroyed in the circulation, whether it be produced by exterior causes, or from an excitant within, or by both conjointly, nature generally makes an effort to rid the system of the offending cause by emesis, which she frequently does; and at the same time that the vomiting ejects the irritant from the stomach, it also gives a centrifugal action to the fluids. In this manner the equilibrium is frequently restored, and if the congestion in the internal or-

gans has not already caused local lesion and produced a point of irritation, the patient will in all probability be shortly relieved.

There are other causes eminently productive of disease in the chylopoietic organs, during the hot season: I allude to articles of food and drink. And here I must be permitted to raise my voice against an article esteemed a great luxury in hot weather—I mean ice. Ice never was designed for man in summer as an article of constant use. As a medicine, it is not only a luxury, but a remedial agent of much value. I cannot, however, conceive of a practice better calculated to impair the action of the stomach, than frequent and large draughts of ice-water in hot weather. There is no danger in drinking ice-water in cold weather; no man ever heard of any one's being injured by it. But I honestly believe that much of the disease of our southern cities is produced by this very article, in the hot season. The common water of our springs and wells is sufficiently cold for a healthy man, and even it occasionally produces death very suddenly when taken imprudently. I know that the water in many cities is not only warm, but offensive, and really requires something to make it potable; my advice to the inhabitants of such places would be to use ice water sparingly, if they would pass a healthy summer. Better drink water a little above than below the common temperature of good spring water.

The treatment of summer diseases, and especially of fever, is a subject of great importance. No one has yet given us a correct treatise upon this subject; nor is it probable that we shall ever have one. Not that fever is not successfully treated by many physicians; we know that this is the fact. But, sir, can you sit down and tell of your students how to treat "the fever." If you can, I acknowledge I cannot. Fever is the consequence of a thousand causes, and the great secret in subduing a fever of any form is to ascertain the cause. Remove that and the fever will leave the apartment.

Our remarks upon the treatment of fever must of necessity be very general. The intermitting form of the disease, the

simplest of all the complaints of the hot season, is characterized by a chill, head-ache, pains in the back and extremities, frequently vomiting, and then considerable arterial excitement, the continuance of which depends mainly upon the peculiar periodicity of the disease: a copious diaphoresis usually terminates the paroxysm, and the man looks and feels pretty well. The second, third, or fourth day, as the case may be, he has another paroxysm, and at the regular time, a third, and so on. I have seen a man have an ague, followed by high arterial excitement, and profuse perspiration, the paroxysm terminating and again returning in six hours from the attack. This state of things continued for three days, resisting all the ordinary remedial agents, and was finally arrested by giving sixty grains of calomel, and repeating the dose twice in sixteen hours. Each dose procured one evacuation, and only one, from the bowels. The periodicity was completely broken up, and although the agues returned at irregular intervals, they were arrested entirely in a few days by giving sixty grains of calomel every twelve hours. I expect if Dr. Chapman were to hear of this, that he would have me published in every newspaper from the Lakes to the Gulf of Mexico. Well, it made no "holes in his head"—destroyed neither his nose nor his jaws: no, it did not even inflame his gums, nor produce any fetor in his breath.

Do not from this case, however, deem me extravagantly fond of calomel. I am not. I had the mortification, a little more than twelve months since, to see one of my finest children killed by it. She was just past five years of age, and was the subject of the terrible epidemic I described at our last meeting. I gave the medicine myself; three five-grain doses, and one dose of ten grains in the course of forty-eight hours. Her jaws ulcerated—her tongue sloughed, and such a pitiable object I trust never to behold again. So, I present you with two cases--both pictures accurately drawn, and conclude by saying that I never use calomel when other remedies will answer my purpose. When a little will produce the effect, it is wise to use the smallest amount.

The treatment of the intermittent form of fever is usually very simple. An emetic, six hours before the expected paroxysm, and a dose of calomel, rhubarb, and aloes, equal parts, in the form of pills, three hours before the chill, will arrest many cases. If these means fail, sulphate of quinine, taken during the apyrexia, will almost always succeed. The efficacy of quinine in fevers seems to depend not upon any tonic qualities, but upon its febrifuge principle. It prevents the recurrence of a paroxysm by giving a centrifugal action to the fluids, and restoring their equilibrium. It acts principally on the nervous system. Almost every man in the community knows what will cure fever and ague, but the people do not often succeed in it. The reason is this: they neither give the medicine at the proper time, nor in the proper doses. This is the great secret in treating not only intermitting but remitting fevers. Purgatives should always be given in the intermission or remission—about three hours before the expected paroxysm.

The treatment of the Congestive form of fever, as it is commonly called, is more difficult, and requires vigorous and prompt remedies. Many authors who write about this form of fever, I am sure, never saw a case of it; and some even deny the existence of any such disease. It has fallen in my way to see much of it. I treated a great many cases in the fall of 1835, and again in the summer of 1839 and 1840. The paroxysm in bad cases is generally ushered in with great distress in the præcordial region, difficult respiration, attended with frequent and deep sighing, pain in the head and back, vomiting, shrunken features, purgings of various kinds, sometimes like rice water, with green flocculi floating in it—these flocculi are nothing but mucus when you wash off the green tinge. Again, I have seen as much as half a gallon of reddish serum thrown off at once; great thrist attends with restlessness, and a constant desire for fresh air. Reaction comes on after a while, slowly, and is generally very partial. In the course of twelve hours the patient becomes tolerably comfortable, and if you did not know what had been his condition, you would say there was not much the matter with him.

But the next day would disclose to you the alarming state of things. You may succeed in getting him through the second paroxysm, but if you have not afforded him relief before the third supervenes, you have hardly anything to hope.

I should be glad to give you the treatment of such a case in a stout healthy man, and also in a pregnant female, but it would be extending this paper too far. I may do so on a future occasion.

The next, and most important, inquiry is, how are those attacks of fever to be prevented? If miasmata be admitted the exclusive cause of fever, I have nothing new or interesting to communicate. But I am certain that these agents are charged with a great deal too much. I have practised medicine for eleven years, during which time my practice has been extended over every peculiarity of location to be found in Rutherford county: on creeks, on the river, on frog-ponds, and mill-ponds—over the rich alluvial soil common to our watercourses, and on the dry, gravelly oak-ridges removed from the river, and among the rocks and cedars where a domestic hen could scarcely find leaves enough to make her nest; and I declare that I have seen as bad forms of fever in one district as in the other. I have seen the worst forms of fever pervading the high lands during the hot season, when the people on the river and creeks were comparatively healthy. I am not prepared to deny the malarious origin of our summer and autumnal diseases. I know those diseases are very common in districts known as malarious; but may they not be produced by other causes, independent of miasmata? The atmosphere undergoes great changes, sometimes very rapid changes, in such districts in the course of twenty-four hours, as respects density and temperature. Considerable impression must be made on the extremities of the sanguiferous and nervous systems, and here the first impression is usually observed from the action of external malign causes. But I forbear going into a discussion of this subject.—The preventives consist in as little exposure to the sun as possible, and when exposed, moderate labor is better than idleness; the night air should be

avoided; and if you are compelled to ride, put on some additional clothing, and take a little light nourishment. The diet should be vegetables, chiefly—stomach never to be loaded with anything--after labor, or exercise, care to be used not to cool off too rapidly—fires to be kindled in our houses, every morning and evening, and ice water to be avoided. These precautions being observed, my experience and observation authorize me to say, that we can live in "the malarious district" and escape "the fever."

Another disease peculiar to the hot season, is Cholera Infantum. This is indeed a tangible something—a disease, about which we can understand each other. Cholera infantum or "the summer complaint," is a disease peculiar to children in the hot season, provided they are of, or near a certain age. When I say that it is peculiar to children of a certain age, and during the hot season, I do not mean to be understood as conveying the impression that children will have cholera infantum, in the summer, in any event. I mean simply, that the offending causes from without and within the system, are peculiarly apt to induce cholera infantum in children of a certain age, during the warm season. Children who are born in the winter or spring, generally pass through the first summer without any inconvenience from this disease. Two causes are mainly instrumental in producing it. The increased temperature is the great *predisposing* cause, but improper clothing and feeding are the two fruitful agents in bringing on the attack. I am aware that *dentition* is usually assigned as the cause, but this idea always seemed irrational to me, and to be founded in fact upon erroneous physiology. It is true, that cholera infantum is most common with children during the period of dentition, but then I cannot adopt a philosophy which charges a naturally healthy process with the production which those distressing and dangerous diseases which befall children at that period. The true reason why this disease generally appears in children of a certain age and during the hot season, has always seemed to me to be this:—Children are usually weaned between the ninth and the eighteenth month; den-

tition usually commences before this period and continues beyond it. The change in the diet of children is a fruitful exciting cause. They are seldom fed on such articles as they ought to have, and their food is usually badly prepared, and the feeding succeeds the weaning too suddenly. Solid articles of food, and often of an indigestible character, are given to them before they are able to masticate—they swallow them in the solid form—an irritant is thrown directly into the stomach, to run the whole course of the digestive tube, and finally to be thrown off in the same state in which it was received. Children, while being weaned, are treated after this manner four or five times a day, and then often put to bed at night with a piece of cake in their hands.

Improper clothing is another cause of cholera infantum. Children are easily impressed by atmospheric vicissitudes, if they are not attended to, and their clothing such as will keep up an harmonious action between their systems and the change without. A good maxim, then, for old persons, as well as for children, is to change their clothes with the changes of the weather, and always to err, if either way, on the side of too much, rather than too little clothing. Children during this period are generally too thinly clad, and their clothing is scarcely ever adapted to the vicissitudes of our climate.

The disease, at the onset, is easily managed. An emetic to empty the stomach, if it has not already been emptied sufficiently, and a brisk calomel purgative, if the bowels have not been actively opened, will relieve the majority of cases. But if the complaint is of several days' standing, it frequently becomes serious, and quite intractable, unless treated with judgment as well by the nurse as the physician. Alterative portions of calomel, combined with prepared chalk and ginger, I have found an excellent remedy, given in small doses, and at short intervals; allowing the child but little to eat or to drink. The warm bath to invite the fluids to the surface of the body, and, if there is much inaction in the capillary vessels, a flannel shirt are to be adopted. I know this is contrary to the views of many physicians, but I am able to sustain it against any at-

tack, let it come from what quarter it may. A flannel shirt, in the month of August, sounds like an absurd remedy to many ears, but experience confirms its remedial virtues in chronic cases of cholera infantum. My advice to mothers would be either to wean their children before the warm season commences, or else, if practicable, to postpone it till cold weather.

Here my remarks upon the diseases of the hot season must close. Without exhausting the subject, I have said enough to afford an outline of the causes which produce them, and of the treatment which I have found effectual in relieving them. The same general remarks will apply to all our summer diseases.

The complaints of winter are the next in order, having already premised that those of autumn and spring are of a mixed form, partaking of the character of those of the summer and winter preceding, and inclining also to those which are shortly to follow.

The diseases of winter are principally confined to the lungs and their appendages. I have already alluded to the distribution of the capillary vessels through the lungs, and endeavored, briefly, to show the reason why the lungs are not so much disposed to take on disease during the hot season, as the abdominal viscera. This I attempted to account for by the fact, that the capillaries of the lungs are immediately and directly influenced by the increase of temperature equally with the capillaries of the skin. The process of respiration carries to them every vicissitude of temperature which the atmosphere experiences. Another reason why they do not suffer equally with the abdominal viscera, is to be found in the comparative shortness of their veins, and the activity of their circulation. Still the lungs are liable to disease; but I would remark that no viscus in the great cavities is more easily relieved of inflammation than the lung, provided there is no predisposition in it to tubercle. The treatment is simple, and must be prompt, decisive, and energetic.

I would revert to the subject of fevers for one moment, for

the purpose of remarking, that during the stage of congestion the lungs are seriously implicated, as is evidenced by the tightness across the chest, the difficulty of breathing, and other symptoms. This state of things, however, ordinarily passes away with the particular stage of the fever, and the lungs sustain no lasting injury. But this is not always the case. If tubercles exist in the lungs they are rapidly developed by the febrile commotion, and the agues are followed by phthisis pulmonalis. Thus, it has been the remark of all physicians in this region of the State, that the cases of consumption were greatly multiplied after the sickly summers of 1839 and 1840.

The only other point belonging to the subject which I shall stop to discuss is, why are the lungs and their appendages, and the serous, fibrous, and fibro-cartilaginous membranes generally, more predisposed to disease in winter than they are in summer? That pleurisies, pneumonias, catarrhs, rheumatism, &c., are peculiarly diseases of winter, is a fact which no one will question. But why is it, that while exposure, in summer, to the night air, induces affections of the abdominal viscera, exposure to the same cause in winter, will induce disease of the thoracic organs, or an attack of inflammatory rheumatism? These diseases are regarded as essentially inflammatory; no controversy can exist as to their pathology. Why they are the products of cold weather, especially, is a question which it may be hazardous to attempt to answer; but if I were to venture an opinion concerning the cause, I should say that it was connected with the large amount of oxygen inspired, and of carbonic acid exhaled in a cold atmosphere. But, whatever may be the latent source of these maladies, the concurrence of the profession relative to their treatment is very decided, and leaves but little to be said on this point. Every practitioner understands that the measures demanded are the antiphlogistic—the lancet, tartar emetic, calomel and opium.

May 1, 1843.

[At the conclusion of Dr. Richardson's Address, a member of the Society, in reply to the allusion to Professor Chapman, remarked that the friends of that

distinguished teacher had disavowed for him the authorship of the ridiculous paragraph, which went the rounds of the newspapers, about a year since, describing, in exaggerated terms, the injuries resulting from the employment of calomel. As the allusion is retained in the paper now published, this statement seems to be due to all the parties concerned. Y.]

ART. III.—*A Case of Renal Calculi, with Abscess and Destruction of the right Kidney.* Reported by R. MARTIN, M.D., of Nashville, to the Medical Society of Tennessee. May, 1843.

On the 30th of January, 1841, I visited a negro man, the property of W. S. Y., Esq., who, in the latter part of the preceding month, had complained of violent pain in the abdomen, extending along the spermatic cord of the right side. When I saw him he had severe pain between the umbilicus and spine of the ilium, with a prominence of, perhaps, six inches in its several superficial diameters, pretty well defined, and acutely sensible to the touch. Along with an anxious and depressed countenance, a hot, dry skin, small, frequent and slightly tense pulse, his urine was scanty, his tongue nearly natural.

During the month of February his sufferings were materially mitigated by medical treatment, his appetite improved, and he slept pretty well at night; the sensibility of the prominent section of the abdomen abated, and about the first of March the prominence suddenly decreased in size, and was followed, as the patient reported, by the discharge at one time of at least a pint of pus through the urethra, and by smaller quantities at irregular intervals for some days. From that time his apparent improvement was more steady and obvious.

About the first of April, he thought himself able to go out to work, and did plough a part of a day, contrary to my advice, and without his master's permission.

From that time he again declined, the local fulness of the abdomen reappearing, and on the 22d of April, its character-

istic local prominence was merged in a less marked, though general increased volume of the abdomen. I did not see him until the 25th; at which time he had distressing and incessant hiccough, shrunken and anxious countenance, feeble, very frequent, thready pulse, violent pain and excessive tenderness over the entire abdomen—position, as when first seen, on the back, with the thighs flexed on the pelvis; skin cool and moist; extremities cold.

May 20th.—Patient died. This morning, corpse greatly emaciated, presenting an unusual dimension, forward and laterally in the upper third of the abdomen, and lower section of the chest—the whole anterior extent of this prominent section sounded dull on percussion. When the sternum was raised a healthy liver was found lying directly under the lower third of that bone, adhering by a very delicate texture of lymph to the anterior concavity of the diaphragm and parietes of the abdomen to its margin. Lower down in the abdomen, the omentum adhered to the walls of the cavity before, and to the intestines behind, and they to each other wherever there was contact. Five pints of consistent inodorous pus were taken from the abdomen, occupying every accessible portion of its cavity, though much the largest collection was found in the posterior part of the right lumbar, extending through the hypochondriac region, encroaching on the chest, by forcing the diaphragm upward, and the liver upward, forward and to the left, until it was brought into the position already described, and also displacing the heart, to some extent. In a word, every thing moveable was carried more or less upward, and to the left.

The peritoneum was here much thickened, and so it was in several other situations. In the chest were some adhesions.

No vestige of the right kidney, in its peculiar renal structure, was detected, but, occupying the right half front of the upper part of the first and second lumbar vertebræ, were found three calculi, enclosed in an enlarged sacculated ureter, the coats of which were very thick.

The bladder contained six or eight ounces of a more fluid

pus, and was healthy with two exceptions,—a slight thickening about the orifice of the diseased ureter, and a loss of substance, the superficial extent of which was equal to a shilling piece, and extending nearly through the bladder, while the characteristic features of ordinary ulceration were absent.

Every portion of the large intestines was occupied by a substance, in color an invisible green—wanting the odor of fæces—in consistence ranging from that of cheese to cream. In the rectum it was most firm; the small intestines contained a similar substance in smaller quantity, and of more fluid consistence.

The muscular coat of the intestines pretty generally, but especially of the large ones, was almost black, without any other apparent alteration in their physical structure. The same alteration of color was also observed in the portion of the ureters enclosing the calculi.

The length of time that elapsed from the escape of pus from its original situation, to the death of the patient, is a circumstance worthy of remark.

May, 1843.

ART. IV.—*A Case of protracted and difficult Labour, followed by Sloughing of the Vagina, and Recto-Vaginal Septum.* By Dr. JOHN P. ANDERSON, of Sparta, Alabama.

The case about to be described cannot be regarded as unimportant, in a practical point of view. It admonishes, in a manner the most impressive, of the danger of suffering the head of the fœtus to remain long impacted in the pelvis, pressing with such force against the soft parts as to arrest the circulation in them, and finally destroy their vitality. The unhappy subject of the following case has consulted an eminent surgeon, in the hope that the injury might be repaired by an operation. She has not received much encouragement, and meantime the particulars of the case are laid before the

profession. Should an operation be determined on, the result of it shall be communicated.

Mrs. B., æt. 24 years, was taken in labour in November, 1841; a physician was called in, who, on examination, ascertained that the waters had been discharged. On inquiry he was told that this had occurred some hours previously; otherwise all things promised well. Six hours passed without much increase of pain, but about the seventh hour it came on with such force that it was thought the child must be soon expelled, as the head had already descended far into the pelvis. In this situation things continued for thirty-eight hours, every effort at effecting delivery by natural means being made by the physician in vain. The powers of her system began now to give way, and as the medical attendant was reluctant to resort to embryotomy, although the child had been dead for some hours, the patient requested that I should be sent for, at a distance of forty-five miles. Many hours necessarily elapsed before I could reach her bed-side, and when I did so, I had the satisfaction to learn that her delivery had been accomplished two hours before. The head, of monstrous size, had been perforated, and removed, piece-meal, by her physician. Her life was thus preserved, but the most serious consequences resulted. The inflammation which followed, terminated in sloughing. A communication between the vagina and rectum was established, by the destruction of a large portion of the recto-vaginal septum, through which the fæces when fluid now find their way into the vagina, and are discharged involuntarily. She has perfect control over the urinary discharge, although the urethra was involved to the extent of five-eights of an inch in the sloughing. She menstruates regularly, and her general health is good. She is ready to submit to any surgical operation which affords any prospect of relief, preferring death to her present situation.

January, 1844.

REVIEWS.

ART. V.—*A Treatise on Food and Diet:* with observations on the Dietetical Regimen, suited for *Disordered States of the Digestive Organs;* and an Account of the Dietaries of some of the principal Metropolitan and other Establishments for Paupers, Lunatics, Criminals, Children, the Sick, &c. By JONATHAN PEREIRA, M.D., F.R.S., &. L.S., Licentiate of the Royal College of Physicians in London, &c. &c. Edited by CHARLES A. LEE, M.D. New York: J. & H. G. Langley. 1vol. 8vo. pp. 325. 1843.

In our last number we noticed, at considerable length, the Elements of Materia Medica, by Pereira—an encyclopedia of knowledge in that department of medical science—by the common consent of the profession, the most elaborate and scientific treatise on Materia Medica in our language. We have now to call the attention of our readers to a work by the same author on a cognate branch of science—the Materia Alimentaria—to a treatise on Food and Diet. They will agree with us, we suppose, that what one eats is a matter not less worthy of grave consideration, than what he takes from his apothecary. The study of the composition of aliments, and their adaptation to the various conditions of the sick, is one in which physicians must feel the liveliest interest. They know that their best directed remedial efforts are often rendered abortive, by the indulgence of their patients in unsuitable articles of diet. Daily it is their experience how difficult it is to impress upon nurses, and the friends of sick people, the importance of seconding their medicines by proper

dietetic measures. A treatise, then, embracing the latest discoveries on this subject, and presenting a summary of all the most important facts known in relation to the chemical constitution of alimentary substances, digested by a mind vigorous, and logical in its action, and stored with science, cannot prove otherwise than highly acceptable to the profession. Such a work is Pereira's. The industry, research, and judgment evinced in his earlier production, are the qualities required in the preparation of a treatise on Food and Diet. In reading this work, one is brought up to the present state of the extant knowledge on the subject. Its pages are enriched by the facts brought to light by the labors of Dumas, Liebig, and Boussingault, and the brilliant discoveries made in organic chemistry by these and other chemists, within the last few years, are faithfully reflected in it. A summary of all that chemical analysis has revealed, or experience taught, of the composition and qualities of the various substances which form our aliment, is to be found in this treatise.

We are glad that the work has been issued in so cheap a form, as well as that the style is such as to adapt it to the general reader, which circumstances, it is to be hoped, will insure it a wide circulation, and cause a knowledge of its valuable facts and conclusions to be generally diffused.

The author is burdened with no cherished theory, which he feels bound to sustain on all occasions. Facts from all authorities, chemical or physiological, are fairly and fully stated. He weighs testimony impartially, and is ready to receive the truth from whatever quarter it may come. He rejects the classification of alimentary principles, proposed by his countryman, Prout, and adopts that of the German chemist and physiologist, Tiedemann. In a word, he displays, throughout, an unprejudiced as well as enlarged and philosophical mind, a patience of research, and powers of reasoning which satisfy us, that the preparation of such a work could not have been committed to abler hands.

He adopts, as has just been stated, the classification of Tiedemann, who considers the subject of Food under the

heads of *Alimentary Principles*, and *Compound Aliments.* The former uniting compose the several articles of diet. Thus meat consists mainly of fibrine, albumen, gelatine, hæmatosin, fat, and water, alimentary principles; and wheat, of starch, gluten, sugar, and gum, belonging also to that class. But the alimentary principles are themselves compound substances. They contain varying numbers of simple, or undecomposed bodies. Fibrine, for example, consists of carbon, hydrogen, nitrogen, oxygen, phosphorus, and sulphur, known as chemical elements; the study of which is preliminary to the consideration of elementary principles.

Chapter I, therefore, treats of the *Chemical Elements of Foods*, of which there are thirteen; namely, carbon, hydrogen, oxygen, nitrogen, phosphorus, sulphur, iron, chlorine, sodium, calcium, potassium, magnesium, and fluorine. These, our author alleges, are the essential constituents of the human body, the presence of arsenic, lead, and copper, said to have been occasionally detected by certain chemists, resting, in his judgment, upon insufficient testimony. They are derived from our food, for "a living body," as Dr. Pereira correctly observes, "has no power of forming elements, or converting one elementary substance into another." It is possible that some of the bodies now esteemed elementary, may yet be decomposed and proved to consist of two or more elements. This is the conjecture of Prout, who believes that the lime found in the skeleton of the young chick is obtained by the transmutation of some of the so-called elements, which, under extraordinary circumstances he supposes the vital agents can effect. This, however, does not affect the truth of the proposition, that the living body cannot *create* an element, or change one element into another, for which, probably, no one will now contend.

Proceeding to notice the chemical elements individually, he commences with carbon, one of the most extensively distributed of substances.

"Carbon is an essential constituent of every living or organized tissue, both vegetable and animal. It is, therefore, a

necessary ingredient of food," and, accordingly, it is found in the seeds which afford nourishment to the embryo plant, in the yolk of eggs, which supply the young bird with food, and in the milk, "upon which young mammals subsist during the first period of their existence after birth."

The author gives a table showing the quantity of carbon contained in different foods, from which it appears that the nitrogenized substances—the *proteine compounds*—are composed of a little more than 54 per cent. of this element, and that the article of food richest in carbon is hog's lard, into which it enters in the proportion of 79.098 per cent. The quantity of carbon consumed, in the form of food, must, therefore, vary very considerably in different individuals, and in the same individual at different times. Liebig states that an adult, taking moderate exercise, consumes 15.3 oz. avoirdupois of carbon daily, and the statement rests upon observations made with care upon the food consumed by a number of soldiers in barracks. Assuming, then, that each of these soldiers consumed daily about one pound, avoirdupois, of carbon, and that they neither gained nor lost in weight, which is probable, what, asks our author, became of the carbon thus taken in the form of food? As it does not pass off with the excrements, there can be but one answer given to the question, and that is the one which Pereira makes, "that it is thrown out of the system by the lungs and the skin in the form of carbonic acid." He continues:

"By the union of carbon and oxygen, in whatever part of the system this is effected, heat must be evolved. At least, in all other cases, the formation of carbonic acid is attended with the evolution of heat; and we have a right, therefore, to assume, that the same takes place within the body. We are, in fact, acquainted with no conceivable reason why it should be otherwise. Now, according to Despretz, one pound of pure charcoal evolves, by its combustion in oxygen gas, sufficient heat to raise the temperature of 78lbs. of water from 32° Fahr. to 212° Fahr.; and this must be about the amount evolved in the case of the Darmstadt soldiers, independently of the heat produced by the union of oxygen with hydrogen hereafter to be noticed.

"It appears to me that we have a sufficient explanation of animal temperature in the chemical changes just referred to. Indeed, it cannot be doubted that a large proportion, if not the whole, of the heat evolved by animals, is produced by chemical action. But it is scarcely to be expected that experiments can be so nicely and delicately performed as to demonstrate in a precise manner the truth of this chemical theory of animal heat; for while, on the one hand, considerable difficulty is experienced in determining the actual quantity of combustible matter oxidated in the system, it is almost impossible on the other, to estimate, with absolute nicety, the amount of heat actually imparted by a living animal to surrounding bodies. The results of our experiments, therefore, can only furnish, at the most, approximations to the truth.

"Liebig has endeavored to show, that by the conversion of starch or sugar into fat, oxygen is supplied to the system; and that by the union of this disengaged oxygen with carbon (from the bile, for example) heat is developed. Suppose 1 equivalent of carbonic acid, CO_2, and 7 equivalents of oxygen, O_7, to be abstracted from one equivalent of starch, C_{12} H_{10} O_{10}, we have, in the residue, the empirical formula for fat, C_{11} H_{10} O.

RELATIVE COMPOSITION OF STARCH AND FAT.

1 eq. Starch . .	C_{12} H_{10} O_{10}	1 eq. Fat, . . .	C_{11} H_{10} O
		1 eq. Carbonic Acid C	O_2
		7 eq. Oxygen . . .	O_7
			$C_{12}H_{10}O_{10}$

"The oxygen thus presumed to be separated from the starch can only be disengaged in the form of either carbonic acid or water, or of both; therefore it must have combined with carbon or hydrogen, or both. Now, Liebig has adduced several reasons for presuming that heat must attend the formation of carbonic acid under these circumstances. 'Thus,' says this distinguished chemist, 'in the formation of fat, the vital force possesses a means of counteracting a deficiency in the supply of oxygen, and consequently in that of the heat indispensable for the vital process.'

"In the natural and healthy condition of the system, the food supplies the necessary carbon for the support of animal heat, but when food is withheld, the fat of the body is consumed; its carbon being converted into carbonic acid, its hydrogen into water. Experience has satisfactorily shown that the heat of the blood in health is the same in all climates and in

all conditions of atmospheric temperature. Now it follows that a larger quantity of combustible matter is required in cold climates and cold weather, for keeping up this temperature, than in hot climates and warm weather; since a greater amount of heat must be given off to surrounding media in the former than in the latter. Hence the necessity for a more liberal supply of food in cold weather."

Still, our author is not prepared to go the length of asserting, with Liebig, that if we were to go naked, as the Indians, or if in hunting or fishing we were exposed to the same degree of cold as the Samoyedes, "we should be able to consume the half of a calf, besides a dozen of candles." The influence of a frozen region in augmenting the appetite is admitted, but it is an error, he maintains, "to ascribe the voracity and gormandizing powers of some of the natives of these regions to the influence of cold only." He is rather disposed to look for the strength of the propensity to eat, "in an organ of alimentiveness," the activity of which leads to gluttony in individuals of all nations. He agrees with Liebig, however, that diseases of the liver in tropical climates and hot seasons, may arise from the accumulation of carbon in the system. His words are,

"When the external temperature is high, less carbon is requisite to support the natural heat of the body, and in consequence of the air being expanded, we inhale, at each inspiration, less oxygen by weight than in colder climates and seasons. If, therefore, we continue to consume large quantities of food, there will be an excess of carbonaceous matter in the system.

"The influence of external temperature, excess of food, and want of exercise, on the condition of the liver, is well shown in the goose. The celebrated *pâtés de fois gras*, prepared at Strasburg, are made of the livers of geese, artificially enlarged, 'by the cruel process of shutting the birds up in coops, within a room heated to a very high temperature, and stuffing them constantly with food.'

"In tropical climates and in hot seasons the system requires a smaller quantity, and a less carbonaceous quality, of food than in colder countries and in cold seasons; and the frequent occurrence of hepatic disease among Europeans, who reside in

tropical countries, is probably in part owing to their continued employment of a dietetical system fitted for colder climates."

Hydrogen, like carbon is an essential constituent of every organized tissue, and a necessary ingredient in the food of every living thing. It abounds in the farina and oil of seeds, in the albumen of eggs, and in all the constituents of milk. As the carbon is converted into carbonic acid, the hydrogen, in its ultimate changes in the system, must become water, and in the change must evolve much heat. One pound of hydrogen, according to Despretz, by combustion with oxygen, liberates sufficient heat to raise the temperature of 236lbs. of water from 32° to 212°. Hence, remarks Dr. Pereira,

"Part of the heat developed in carnivorous animals must arise from the oxidation of hydrogen; for, in the first place, hydrogen (as of the fat) disappears from the system, and there is no other mode by which it can have done so except by union with oxygen, and its consequent conversion into water. In the second place, of the atmospheric oxygen taken into the lungs during inspiration, the whole is not found, in the inspired air, in union with carbon, nearly every experimenter having detected a loss."

Oxygen is a large and indispensable ingredient of our food. No other element is so abundant in nature, or performs so many important offices. In almost every change which takes place among natural bodies it is an essential agent, and is so intimately connected with the processes of life, that they speedily cease when its influence is withdrawn. As it causes combustion in the lamp by uniting with the oil, and developes electricity in the voltaic battery by oxidizing the metal, "so animal life seems to be inseparably connected with the influence of oxygen on the organism. Interrupt the influence of oxygen, and the flame is extinguished, the electrical current is stopped, and all vital phenomena cease." In each case, the action of the oxygen seems destructive—matter is consumed, or converted into other shapes. The metal is oxidized and dissolved, the oil exhales as carbonic acid, and parts of the animal body also are converted into this gas. Oxygen, then,

the *vital* air, acts on the organism to consume it; and "man, and every other animal, are exposed at every period of their lives to the unceasing and destructive action of the atmosphere; with every breath he expires a part of his body, every moment of his life he produces carbonic acid, the carbon of which his food must replace."

The relative proportions of oxygen and carbon in certain kinds of food are given in the following table, taken from Liebig:

RELATIVE PROPORTIONS OF CARBON AND OXYGEN IN ALIMENTARY PRINCIPLES.

In Fats (on an average) - - -	120 eq. of Carbon	10 eq. of Oxygen.
In Fibrine, Albumen, and Caseine	120 "	36 "
In Starch - - - - - - - - -	120 "	100 "
In Cane Sugar - - - - - - -	120 "	110 "
In Gum - - - - - - - - -	120 "	110 "
In Sugar of Milk - - - - - -	120 "	120 "
In Grape Sugar - - - - - -	120 "	140 "

The carbon and hydrogen of the food being, for the most part, thrown out of the system in combination with oxygen, it follows that the consumption of oxygen must vary with the quality of food, being greater when animal food is eaten, and less when the diet is chiefly composed of vegetables. This view is confirmed by the experience of the diver, Spalding, who consumed more of that air in his diving-bell, when he had used a diet of animal food, and also by the experiments of Fyfe, who found that the consumption of oxygen was greatly reduced by the employment of vegetable diet.

Nitrogen is the next element of the vital tissues. "The chief ingredients of the blood, says Liebig, "contain nearly 17 per cent. of nitrogen, and no part of an organ contains less than 17 per cent. of nitrogen." Fat and water are components of the animal body which are destitute of nitrogen, but they are not considered as organized or living substances. For the development, nutrition, and renovation of all the living animal parts nitrogen is essential; it is therefore to be found in all the articles from which young animals derive their nourishment. It constitutes an element in the yolk of the egg, and is one of the elements in the caseine of milk. In the proteine compounds its average per-centage is over 15, in the

gelatinous tissues about 18, in wheat dried in vacuo 2.3, in peas similarly dried 4.2, in dried potatoes 1.80, in cabbage dried ot 212°, 3.70, in carrots, also dried, 2.40, in turnips, in the same condition, 2.20. We have shown, in a former number, that it is the opinion of Liebig, as well as of other chemists, that it is only the *nitrogenized* elements which are capable of conversion into blood, and of forming organized tissues, and that the *non-nitrogenized* foods, although indispensable to the comfort and very existence of animals, are only so as being necessary to support the process of respiration—in other words, to maintain animal heat.

Some objections are brought forward by our author against this doctrine, but we shall not stop to consider them. The fact, now fully established, that the food of all animals, herbivorous and carnivorous, contains nitrogenized matters, identical in composition with the principal constituents of the blood, is of itself sufficient to render the hypothesis of Liebig highly probable. Fibrine, albumen and caseine, whether found in animal or vegetable compounds, are the same in composition, and they are amply abundant in the food of all classes of animals to supply the materials for the growth, nutrition, and reproduction of their parts. And if sufficient, what need for looking further for elements of nutrition—for supposing that the carbon and hydrogen of sugar, gum, starch and the oils, have any agency in the formation of blood? Still, it is possible that the other opinion may be true, that both sugar and fat are occasionally converted into nitrogenized animal substances. It has not been made out that nitrogen is never absorbed by the lungs, and admitting that it is, at times, imbibed with oxygen, its use may be to assimilate these matters to the living animal tissues. There is nothing impossible in the supposition, and although we do not deem it a probable one, we cannot doubt the power of the vital processes to effect such a change, any more than that, by the separation of a part of their nitrogen, they may convert the gelatinous tissues into proteine compounds. The arguments in favor of it will be found stated, with great clearness and force, by Per

eira under the head of nitrogen. He insists, with much plausibility, that sugar takes some other part in digestion than merely to supply the blood with one of the elements of respiration. But we cannot pursue this subject further.

Phosphorus, a substance never seen except in the laboratory and shops, is yet an invariable constituent of many animal and vegetable substances, and an essential ingredient of fibrine and albumen, and of all the tissues into which they enter. It is contained in the nervous matter, in the brain, and in the bones, as well as in the spermatic fluid and the ovaria. It is a constituent of the flesh, the blood and the bones of animals which form our food. In the bones it exists as phosphoric acid, but in the soft parts the precise form it affects is not known. Fishes are especially rich in this matter, and it is also a much larger constituent of vegetable substances than was suspected before chemists had furnished us with the analysis of organic bodies. Unrefined sugar, garlic, potatoes, and the seeds of all the grasses, contain it, so that the herbivora derive it from this source in quantities greater than their systems require, and the excess occasionally gives rise to concretions in the cœcum of the horse as large as the head of a child. Pereira mentions one of these *hippolithi* in his possession consisting of the ammoniacal phosphate of magnesia, which weighs between five and six pounds.

Phosphoric acid is described by chemists as possessing a singular pliancy of constitution, which seems to have adapted it, above all other mineral acids, to the wants of the animal economy. One of the salts of this acid, the metaphosphate of soda, by the agency of heat alone, exhibits a change of *nature*, without a change of *composition*, similar to what often occurs in organic compounds. This salt combines with water, which becomes attached to it as water of crystallization, and the salt is then a hydrate. Dried at 212°, it retains water, but not as a base, for on dissolving the salt again its constitution is found to be unaltered—it is still a metaphosphate. "But let this metaphosphate be heated to 300°, and *without losing anything, it changes completely*, and becomes a pyrophosphate, the

water which was constitutional before, being now basic." This peculiarity of phosphoric acid fits it to make "one of the links by which mineral and organic compounds are connected."*

Sulphur is very widely disseminated among animal and vegetable bodies. In fibrine, albumen and caseine, as well as in the hair and bones, it is always present, and in some of these, probably, uncombined with oxygen. The vegetable kingdom is not deficient in this element. Celery, rice, hops, ginger, all the cruciferous tribe of plants, contain it. It is found in asafœtida, which is sometimes used as a condiment, and by some oriental tribes is considered as "*food for the gods.*"

The sulphuretted hydrogen, found in the alimentary canal, is supposed by our author to be often produced by the action of decomposing organic matters on the sulphates. "An eminent chemical philosopher tells me," he remarks, "that he is always much troubled with the evolution of this gas after the use of sulphate of magnesia." Every physician will be able to recall to his memory instances of this kind—cases in which towards a fatal termination, especially, sulphuric acid and the sulphates were decomposed, with the extrication of much sulphuretted hydrogen.

Iron has been long recognized as one of the constituents of organic beings, but it is a little remarkable that chemists are not yet agreed as to the precise state in which it exists in their tissues. Dr. Pereira observes,

"This metal is an essential constituent of the blood corpuscles, though, according to the recent researches of Scherer, it is neither essential to hæmatosin, nor necessary to the color of the blood. But the well-known beneficial influence of chalybeates in the disease called anæmia, in which the blood is found to contain a smaller quantity of iron than in a state of health, favors the notion that the proper color of this fluid is in some way connected with the amount of iron contained in it; for one of the most characteristic symptoms of this malady is an absence of the natural vermilion tint of the complexion."

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* Graham's Elements of Chemistry, p. 256.

The American editor, Dr. Lee, adds an interesting note on this subject. He says:

"The physiological effects of a want of the usual proportion of iron in the blood globules, yet remain to be investigated. If Liebig's hypothesis be correct, then such a deficiency must cause the globules to lose their property of absorbing oxygen and of afterwards giving up this oxygen and carrying off the resulting carbonic acid, which would doubtless lead to important changes in the temperature and other vital phenomena of the body. The vital motions would go on, but the change of matter would be arrested; no lifeless compounds could consequently be separated, such as bile or urine, and the animal temperature would necessarily sink. The phenomena connected with aggravated cases of anæmia, in leucophlegmatic subjects, lend much plausibility to such doctrine."

Chlorine is found in the blood, and in several of the secretions. In the blood and the excretions it is combined with sodium, in the gastric juice it is united to hydrogen, and constitutes the old muriatic acid. It is constantly abstracted from the blood, in the production of the various fluids containing it, and must be continually restored to it again. This is done with the food, in the form of chloride of sodium. The embryo chick finds it in the egg, and the young mammal derives it from its mother's milk. Hydrochloric acid appears to be a necessary agent in the process of digestion, and, in fact, an artificial digestive liquor may be prepared by macerating the lining membrane of the fourth stomach of the calf in water, to which a few drops of this acid have been added. Beefsteak and albumen are gradually dissolved in this mixture, while they are not affected by either the acid or the infusion of the stomach alone. Liebig ascribes the action of the gastric fluid to the circumstance, that it is matter in a state of transformation, which state is communicated to the alimentary substances. A few drops of sour milk left in a pan will cause the fresh milk to ferment in a few hours. Here the milk, undergoing change, communicates the same tendency to the fresh body of the fluid—As yeast, which is matter undergoing transformation, imparts a fermentative tendency to the mass of flour in which it is mingled.

Dr. Pereira adduces several circumstances which are opposed to this theory of digestion. They are given in the following extract:

"The fact ascertained by Schwann, that the solvent principle of the digestive fluid can be precipitated from its neutral solution by acetate of lead, and be obtained again in an active state from the precipitate by means of sulphuretted hydrogen, is apparently inconsistent with Liebig's idea, that this principle is matter in a state of decomposition or transformation. Moreover, if the essential part of the gastric juice—that by which digestion is effected—be a mere transformation of the stomach, how is it that other parts of analogous structure and composition do not suffer the same transformation? I have tried to obtain a digestive liquor from the second stomach of the calf, and from the bladder, but in vain. How is it that this fancied transformation goes on, during life, only when solicited to do so by the presence of aliment or by mechanical irritation? Dr. Beaumont ascertained that pure gastric juice will keep for many months without becoming fetid: a fact scarcely explicable on the hypothesis that its activity depends on a principle in a state of decomposition. I find that while acidulated infusions of the second stomach of the calf, and of the bladder, soon become putrid and fetid, that of the fourth stomach remains remarkably free from unpleasant smell for several weeks. Lastly, I find, contrary to Liebig's statement, that a digestive liquor can be prepared from the fresh undried fourth stomach of a calf.

"I cannot agree with Liebig, that digestion is a process analogous to fermentation; that, in fact, it is nothing more than the transformation of food, effected by the contact of matter in a state of decomposition. If it were, a small quantity of gastric juice ought to be capable of effecting the digestion of an unlimited quantity of food. Now, the experiments of Dr. Beaumont on the natural gastric juice, and of Schwann on the artificial digestive liquor, prove that this is not the case. Both found that only a certain amount of food could be digested with a given quantity of gastric juice; and Dr. Beaumont observes, that "when the juice becomes saturated, it refuses to dissolve more; and if an excess of food have been taken, the residue remains in the stomach, or passes into the bowels in a crude state." Now, this fact is quite inconsistent with the fermentation theory."

We pass over the other chemical elements, calcium, magnesium, potassium, and fluorine, as, with the exception of the first, they are comparatively of less interest as constituents of our food.

Chapter II treats of *alimentary* principles, which Pereira divides into the following twelve classes; namely, *aqueous*, *mucilaginous*, *saccharine*, *amylaceous*, *ligneous*, *pectinaceous*, *acidulous*, *alcoholic*, *oily*, *proteinaceous*, *gelatinous*, and *saline*.

Water makes a large proportion of the human body. The blood contains about 80 per cent., and the flesh about 74 per cent. of it; so that we may assume, with our author, that of the entire human machine nearly three-fourths of its weight are water. Wasted as it is by the various vital processes, a continual supply of this fluid is indispensable to the life of animals, which have been known to subsist for many weeks without solid food, but cannot live many days without water. "In this point of view, it holds an intermediate rank between air and solid food, being less essential than the first, but more so than the last."

Water enters largely into the composition of most of our alimentary substances, in some forming true hydrates, and in others being present merely as accidental moisture. To the constitution of the first it is essential, and its removal by heat or chemical agency changes their nature. Sugar, starch, or albumen is decomposed when deprived of the water which is one of its elements; and, on the other hand, cane sugar or starch, may be converted into sugar of milk, or diabetic sugar by the addition of water. "So also the hydrochloric acid of the gastric juice and the soda of the blood and bile, are derived from common salt by the aid of water." Other cases, where a change of chemical constitution is effected by the instrumentality of water, are cited by Pereira.

In a dietetical point of view water may be regarded as to *quantity* and *quality*. As a remedy in fevers and acute inflammatory diseases, an almost unlimited use of aqueous fluids

is admitted; but in other maladies we restrict the quantity, as in valvular diseases of the heart, when our object is to keep down the volume of the circulating fluid, or to prevent thinness of the blood, as in aneurism of any of the great vessels, in which our only hope is in the coagulation of fibrine within the sac, or when we seek to repress excessive secretion, as of urine in diabetes. Attention to the *quality* as well as the quantity of the water is also important, both in the cure and the prevention of disease. The purest is rain-water; that of wells and springs contains mineral ingredients derived from the strata through which it percolates. River water is a mixture of rain and spring water. It is deemed more wholesome than the water of springs. The health of Nashville, especially of the infant part of the population, is believed to have been improved by the introduction of river water into the city. Children are said to suffer less with bowel complaints than in former years. In the navy of Great Britain it has been ascertained that dysentery has become less prevalent, since care is exercised by the medical officers to have the men supplied with pure water.

The second alimentary principle of our author is *gum*, which exists almost universally in plants, "and appears," he remarks, "to hold the same position in the vegetable economy, that albumen does in the animal." Liebig denies that it possesses nutritive properties, and alleges that its only use as an article of diet, is to furnish fuel for the oxygen consumed in respiration. Prout holds that it is not converted into sugar in the digestive process, and in view of this property, Pereira suggests that it might be advantageously substituted for sugar and amylaceous substances in diabetes. It is found an indigestible article of diet by dyspeptics.

The saccharine principle is a very widely distributed and very important one. "Sugar," says Graham, "seems to be the agent, by means of which plants as well as animals develope the heat they require. The fecundation of plants is always accompanied by heat, the flowers respiring and producing carbonic acid. They must therefore consume carbon,

and accordingly we find that the sugar in the stems of the sugar-cane has entirely disappeared after the flowering and fructification are completed."* The same remark is applicable to the indian corn, the stalk of which is found destitute of sugar after the maturing of the grain. The essential purpose of sugar, according to Liebig, is the development of vital heat, and hence it is an ingredient of the food of all young animals which derive nourishment from the mother, as it is also in that of the embryo plant before its rootlets have permeated the soil. If this principle be supplied to an animal in excess, that portion which is not consumed in respiration is deposited in its system in the shape of fat. It is not, according to his view, one of the blood-making compounds.

Pereira esteems sugar a healthy article of diet, and supposes that the erroneous notion of its being injurious to the teeth, "has been propagated by frugal housewives in order to deter children from indulging in an expensive luxury." He cites the case of Henry, Duke of Beaufort, who died of fever at the advanced age of 70, having eaten nearly a pound of sugar daily for 40 years. "He was never troubled with cough, his teeth were firm, and all his viscera were found, after death, quite sound." Some of the circumstances which forbid the use of sugar as a diet, are indicated in the following passage:

"In diabetes, the power of assimilating saccharine matter is in a great measure, if not wholly, lost; and hence, therefore, the dietetical employment of sugar and sweet foods, in this malady, is highly improper. In the oxalate of lime diathesis, likewise, these foods are objectionable. "I have seen repeated cases," says Dr. Prout, "in which the too free use, or rather abuse, of sugar, has given occasion to the oxalic acid form of dyspepsia; and sooner or later, under favorable circumstances, to the formation of an oxalate of lime calculus." In the phosphatic diathesis, the copious use of unrefined sugar is objectionable, on account of the lime contained in it."

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* Op. cit. p. 689.

Starch, the *amylaceous* principle of our author, is generally distributed in the vegetable kingdom, existing in endogenous and exogenous plants, and being found in roots, stems, tubercles, fruits and seeds. Iceland moss contains 44 parts in the hundred of this principle; tapioca from 7 to 13, potatoes from 9 to 24, arrow-root from 12 to 26, wheat flour 56 to 74, maize nearly 81, and rice more than 85 per cent. To render amylaceous matter digestible in the human stomach it must be cooked, as the heat of that organ, according to Raspail, is not sufficient to burst the grains of the feculent mass. In graminivorous animals and birds the power of the digestive apparatus is greater, but many experiments show that a great advantage results from boiling the farinaceous substances given them for food. By digestion starch is converted into gum and sugar, the latter being probably absorbed, and entering the circulation, according to Liebig, to form an element of respiration. Prout, on the contrary, regards starch as a mild, slightly nutritious, easily digestible article of food, of which man and the higher animals can partake in much larger quantities than sugar, and for an unlimited period. Animals grow fat upon it, but Liebig alleges that it neither developes their organs, nor increases their strength. In the form of sago, arrow-root, tapioca, Iceland moss, or water-gruel, it constitutes an unstimulating diet for persons affcted with morbid sensibility of the primæ viæ, as well as for the subjects of fever and inflammatory diseases.

Our author questions the claim of the *ligneous* principle to a place among nutritious articles. It rests on the statement of Autenrieth, that wood reduced to powder, repeatedly subjected to the heat of an oven, and then ground in the manner of corn, yields a flour which may be made into a perfectly uniform bread. But Pereira supposes that the nutriment found in such bread comes from the starch, which, in the autumn, after the formation of wood has ceased, is diffused through every part of the plant by the autumnal sap. Heyer, by means of a microscope, detected starch thus deposited in the bodies of trees.

Jelly is the *pectinaceous* alimentary principle of Pereira, and abounds in fruits. He says:

"According to Fremy, unripe fruits contain a very small portion only of pectine; but when the fruit becomes ripe, pectine is formed by the action of the vegetable acids of the fruit on a pulpy matter. These acids are contained in cells, from which they do not escape until the period of ripening, when the cells are transparent, distended, and permeable. By subjecting fruit to heat the cells burst and allow the acid to escape, and in this way the formation of pectine is promoted."

Pereira believes "vegetable jelly to be slightly nutritive, and readily digestible." Containing no nitrogen, Liebig places it with sugar and starch, among the elements of respiration.

The acidulous elementary principle is widely distributed among vegetables, and as an article of diet has been used in all periods, and among all nations, except those inhabiting the coldest latitudes. To such it would not appear to be a necessary article of food. They enjoy good health upon an unmixed animal diet; but in warm countries it is undoubtedly necessary to the preservation of health. Its efficacy in preventing scurvy is well known, and in fevers, water sharpened with the vegetable acids makes a beverage which is at the same time grateful and medicinal. But the use of these acids, especially that of vinegar, may be carried too far. Our author cites the following case as showing that the practice, not uncommon among young ladies, of employing it to diminish obesity, is attended with danger:

"A few years ago, a young lady, in easy circumstances, enjoyed good health; she was very plump, had a good appetite, and a complexion blooming with roses and lilies. She began to look upon her plumpness with suspicion; for her mother was very fat, and she was afraid of becoming like her. Accordingly, she consulted a woman, who advised her to drink a small glass of vinegar daily; the young lady followed her advice, and her plumpness diminished. She was delighted with the success of the remedy, and continued it for more than a month. She began to have a cough; but it was dry at its commencement, and was considered as a slight cold, which

would go off. Meantime, from dry it became moist; a slow fever came on, and a difficulty of breathing; her body became lean, and wasted away; night-sweats, swelling of the feet and of the legs succeeded, and a diarrhœa terminated her life. On examination, all the lobes of the lungs were found filled with tubercles, and somewhat resembling a bunch of grapes."

Alcohol is scarcely entitled to a place among alimentary principles. Of all truly nutritious qualities it is admitted to be destitute, and even as an element of respiration its pretensions are questionable. Its influence in promoting animal heat may well be doubted, since it is proved by experience that, other things being equal, men indulging in alcoholic drinks perish sooner from cold, than those who entirely abstain from them. On no ground can the habitual use of such drinks by healthy people be justified, and the profession is called upon by every solemn obligation, to discountenance a practice fraught with the worst consequences to individuals and society.

The *oily* alimentary principle is derived from both the organic kingdoms. It is found in the shape of fixed and volatile oils. Bile, according to Beaumont, accelerates the chymification of oils, and hence small quantities of that fluid are found "mixed with the gastric juices where the use of fat or oily food has been persevered in for some time." In many dyspeptics fat does not become properly chymified, but floats on the contents of the stomach, becoming highly rancid, and exciting heartburn, eructations, nausea, and sometimes vomiting. Butter is less apt to disagree with such patients than any other of the fixed oils, but in many persons of bad digestion we have found broiled bacon to agree better with the stomach than any other article of food, and Dr. Lee makes the same remark concerning children laboring under a chronic form of cholera infantum. This principle is not nutritious, according to the views of Liebig, and the following facts are stated by our author on that subject:

"In the report made to the French Academy of Sciences, in the name of the Gelatine Commission, it is stated that animals fed on fatty substances (fresh butter, lard, and the fat which

surrounds the bullock's heart) refuse, after some time, to take this food, and ultimately die of inanition. During life, they exhaled a strong fatty odor, and, though dying of inanition, were in a remarkable state of *embonpoint*. On a post-mortem examination, all the tissues and organs were found infiltrated with fat, and the liver was in the state called by anatomists *fatty*."

Fibrine, albumen, and caseine contain, as their basis, a substance to which Mulder has affixed the term *proteine;* these constitute a group of alimentary principles termed by Pereira the *proteinaceous*. They are "the plastic elements of nutrition," according to Liebig, and are derived by animals from vegetable matters, in which alone they are produced. But it is remarkable that, while they are the true nutritious elements, not one of them singly is capable of supporting animal life. Magendie fed dogs on fibrine until they died of inanition, and on post-mortem examination it was found, that the blood had almost entirely disappeared, all that was left affording only a few grains of fibrine. We have referred, on other occasions, to the experiments of Tiedemann and Gmelin on geese, in which albumen was fed to these animals with similar results. Still, as Liebig holds, albumen must be regarded as "the true starting point of all the animal tissues." Out of the white and yolk of the egg, the blood of the young bird, the muscles, feathers, nerves, and blood vessels are fabricated, aided only by atmospherical oxygen, and the oil and iron mingled with the albumen.

The vegetable proteinaceous principles are identical, according to the analysis of Mulder and Scherer with the fibrine, albumen, and caseine derived from animals. By the animal processes, they are impressed with the peculiar shape and characteristics which they assume as blood, muscular fibre, and the various tissues of the animal body.

"'How beautifully and admirably simple,' says Liebig, 'appears the process of nutrition in animals, the formation of their organs in which vitality chiefly resides! Those vegetable principles which, in animals, are used to form blood, contain the chief constituents of blood, fibrine, and albumen,

ready formed, as far as regards their composition. All plants, besides, contain a certain quantity of iron, which reappears in the coloring matter of the blood. Vegetable fibrine and animal fibrine, vegetable albumen and animal albumen, hardly differ, even in form; if these principles be wanting in the food, the nutrition of the animal is arrested; and when they are present, the graminivorous animal obtains in its food the very same principles on the presence of which the nutrition of the carnivora entirely depends. Vegetables produce in their organism the blood of all animals, for the carnivora, in consuming the blood and flesh of the graminivora, consume, strictly speaking, only the vegetable principles which have served for the nutrition of the latter. Vegetable fibrine and albumen take the same form in the stomach of the graminivorous animal as animal fibrine and albumen do in that of the carnivorous animal.'"

The foregoing is quoted without comment by Pereira. Dumas has recently expressed himself in language very similar to that of Liebig. Differing as these eminent chemists do on several points of chemico-physiology, the concurrence of their views in regard to animal digestion heightens the probability of their theory. Dumas thus speaks of that process:

"Digestion is a simple function of absorption. The soluble matters pass into the blood, for the most part unaltered; the insoluble matters arrive in the chyle sufficiently divided to be aspired by the orifices of the chyliferous vessels. Digestion has evidently for an object to restore to the blood, a matter proper to furnish for our respiration the ten or fifteen grammes of carbon or the equivalent of hydrogen, which every individual burns per hour, and also to provide the gramme of nitrogen, which is exhaled every hour, in part by the lungs and skin, as well as by the urine. Thus, amylaceous matters are converted into gum and sugar; the saccharine matters formed are absorbed. The fat matters are divided, form an emulsion, and so pass into the vessels, to form afterwards deposits, which the blood takes up and burns, when they are required. The neutral azotised matters, the fibrine, albumen, and caseine, first dissolved, then precipitated, pass into the chyle highly divided or dissolved anew.

"An animal, therefore, receives and assimilates almost untouched, the neutral azotised matters which he finds ready formed in the animals or plants upon which he lives; he re-

ceives oily substances which come from the same sources, and also amylaceous and saccharine substances of the same origin. These three orders of matters, of which the origin is always traceable to the plant, divide themselves into products admitting of assimilation; into fibrine, albumen, caseine, and oily bodies, which serve to increase or renew the organs; and into combustible products, sugar and the oily bodies, which are consumed in respiration. An animal thus assimilates or destroys ready formed organic matters; it creates nothing."

We here close, for the present, our notice of this interesting work. The part which treats of compound aliments, amounting to more than half of the volume, will probably form the subject of a future article. If, in the estimation of some of our readers, we have dwelt with tedious minuteness upon certain chemical questions, our apology is, that they are topics which are exciting unusual attention in the medical world, at the present day, and are every where the subjects of animated discussion. Our next article, however, will be occupied with matters more practical in their nature. Y.

ART VI.—*Principles of Medicine: comprising general Pathology and Therapeutics, and a brief general view of Etiology, Nosology, Semeiology, Diagnosis, and Prognosis.* By CHAS. J. B. WILLIAMS, M.D., F.R.S., Fellow of the Royal College of Physicians; Professor of the Principles and Practice of Medicine, and of Clinical Medicine, and First Physician to the Hospital, University College, London; Consulting Physician to the Hospital for Consumption and Diseases of the Chest. &c. *With Additions and Notes:* By MEREDITH CLYMER, M.D., Lecturer on the Institutes of Medicine; Physician to the Philadelphia Hospital; Fellow of the College of Physicians, &c. &c. Philadelphia: Lea & Blanchard. 1844. 8vo. pp. 383.

This work supplies a deficiency long felt by the profession —the want of an elementary treatise on General Pathology. The author of it has had extensive experience at the bed-side, and has drawn chiefly from his own observation of disease as he has witnessed it in hospitals and private practice, during

upwards of twenty years. The want of this union of science and practice in the same individual, he regards as the cause of the admitted fact, that practical medicine has not kept pace with the rapid improvements in the contributory sciences. He adds, we fear, with too much truth, "that scientific men are not and cannot be practical, because they have had no experience; and practitioners know little of science, and therefore derive little good from it. Instead of working together, these parties are at issue with each other. But it is high time," he continues, "to put an end to this feud. Philosophers must descend from their transcendental positions, to consider the details of practice and purposes of utility."

Without further preface, we proceed at once to notice a work which proposes thus to combine practice and science, and as our notice is designed to be analytical we shall not stop to remark on the introductory chapter, which insists with great force on "the need of principles in medicine."

Chapter I is devoted to the causes of disease, and the first observation is, that—

"Disease sometimes originates within the body from a change in some of the component parts of the animal frame, without any obvious external influence; thus disorder may arise from an undue proportion or predominance of a function, as that of the nervous system; or of a constituent of the body, as in the case of sanguineous plethora. Such states, however, constitute more commonly proclivity to disease than disease itself; and generally disease arises from causes extraneous to the body, although in many instances we may fail to detect these causes."

He adopts the division of the causes of disease, long sanctioned by the profession, into predisposing and exciting, the most numerous of the former of which he remarks are debilitating causes. Thus low fevers, and epidemic and contagious disorders, are rapidly propagated among an ill-fed population. Happily, we have yet but little experience of this in our highly-favored country. But of the truth of the proposition no one can entertain a doubt. The other predisposing causes are as follows: Confinement in impure air, excessive exer-

tion of mind or body without sufficient sleep, long continued heat, long continued cold, habitual intemperance with intoxicating liquors, distressing passions of the mind, excessive and repeated evacuations, either of the blood or of some secretion from it, previous debilitating diseases, and the treatment used to relieve them. Hereditary conformation, and age, are also referred to as predisposing causes.

The exciting causes are next enumerated. He divides them into two classes; to-wit, cognizable agents, and such as are not cognizable. The first class embraces mechanical and chemical agents, ingesta, bodily exertion, mental emotion, suppressed or defective evacuations, excessive evacuations, temperature and changes. In the second class are cited endemic, epidemic and infectious poisons. We deem it sufficient to announce the subjects. The reader will supply the matter under each head from his previous study or observation.

Chapter II treats of *pathology proper*, and in the several sections are discussed diseased irritability, excess of tonicity, diseases of sensibility, diseases of voluntary motion, diseases of sympathetic nervous influence, and diseases of secretion. Under the head of sympathetic nervous influence, he refers to the following pathological phenomena:

"Clinical observation teaches us that not merely motory impressions, but those also which cause sensations, may be reflected, so that when the impression is made on one part, the sensation is experienced in another. I do not allude to the fact that a stroke on the nervous trunk produces feelings referred to its branches, but I advert to impressions on the ultimate distribution of one nerve producing sensations in parts supplied by another nerve, or by another branch of the same nerve. The following are examples of this kind. Touching the external auditory meatus causes a tickling sensation in the glottis. A calculus in the bladder produces pain referred to the extremity of the penis. Ascarides in the rectum cause itching of the anus, and sometimes of the pudenda. Congestion of the liver sometimes is accompanied by pain in the right shoulder-blade; and a disordered state of the stomach, occasionally with pain in the left shoulder-blade. The pains of angina and gastrodynia often extend to the whole chest, and

the former especially radiates to the left arm. Severe frontal headache is almost instantly caused in some persons by acid ingesta, in others by eating ice. Irritation of the intestines, as in cholera and colic, (especially painter's colic), frequently causes pain and tenderness in the legs and feet, even when there has been no cramp or other excitomotory phenomena. Temporary neuralgic affections seem to be due to similar causes."

Diseases of the constituents of the blood are described under the head of diseased secretion. We quote extensively from this part of Dr. Williams' work, as many of the details are new and curious. The constituents of the blood, to be considered as in excess, defect, and alteration, are the red globules, the fibrine, albumen, oil, salts, and water. The average natural proportions of the chief constituents of the blood, according to the best analyses, are 127 red globules, 3 fibrine, 72 animal matter in the serum, 8 salts, and 790 water.

Changes in the Red Particles.—"Excess of the red particles might therefore be expected to cause a general excitement of the vital properties of the body. Accordingly, Lecanu found that they exist in larger proportion in persons of sanguine temperament than in others, and more in males than in females. Andral and Gavarret detected an excess in the early stage of inflammation and fevers, especially eruptive fevers, as measles and scarlatina. In sanguineous plethora, also, and in hæmorrhagic diseases before much blood is lost, they were in excess, in some instances rising to 185 in 1000 of blood. The obvious sign of the abundance of red particles is the florid color apparent in the lips, cheeks, gums, and other vascular parts; the deep-blue color of the superficial veins; and the fine deep crimson which a thin film of blood gives on a white plate. The functions, animal heat, and muscular irritability are in an elevated state, bordering on or passing into febrile excitement."

"The *red particles are defective* in persons of the lymphatic or leucophlegmatic temperament; after great losses of blood, (artificial or from disease); in chlorosis, and in other anæmic states, as those connected with advanced stages of cancer, diabetes, scurvy, and other cachectic diseases; in scrofulous and tuberculous diseases; in the latter periods of fevers, and after severe inflammations; in granular degeneration of the kidney, and other organic diseases attended with dropsy; in diseases

of the spleen, and others of malarious origin. In extreme cases of chlorosis, the proportion of the red particles was found, by Andral, reduced to 28 in 1000 of blood.

"The signs of the defect are, paleness of parts naturally colored with blood, pallid or sallow hue of the skin, pink color of superficial veins, and a pinkish or light purplish hue of a film of blood on a white plate. The symptoms of such a condition are those which will be more fully described under the head of anæmia; a weak state of the functions generally, of circulation, calorification, digestion, and nutrition, constituting their summary."

"The *red particles* are evidently *altered* in some diseases, the coloring matter being much darker than usual, as in the worst forms of scurvy, in which the blood is said, by Mead, to be changed to a dark brown or green color: in the Walcheren and other malignant fevers it has been described as pitchy black. Some change seems to occur in congestive typhoid fevers, in which the blood-vessels become stained or dyed of a deep claret color; this imbibition implies an unnatural solution of the red particles. Probably the occurrence of petechiæ and ecchymosed patches in these diseases is partly dependent on a similar change. The readiness with which the textures become stained in scorbutic subjects, and in secondary syphilis, seems to indicate an alteration in the coloring matter; all inflammations and ecchymoses in the skin being followed by livid, purple, or copper-colored stains. The black matter of melanosis seems to be the coloring part of the blood in an altered state: this is certainly true of the spurious melanosis of the intestines."

"*Remedial Agents.*—Excess of the red particles may be speedily removed by blood-letting, which reduces these much more than the other constituents of the blood. Low or vegetable diet, and the antiphlogistic regimen generally, produce a similar effect more tardily. It is not certain whether any medicines directly act in a similar way; but probably the continued use of mercury, colchicum, and other medicines which largely increase the excretions, ultimately reduce this element. The remarkable pallidity which accompanies the occurrence of extensive suppuration would also point to the formation of pus as a means of diminishing the red particles, which means may be used artifically in the form of setons and suppurating counter-irritants.

"To *promote the increase* of the red particles, *where defective*, we might expect nourishing food, especially meat, exposure

to invigorating air and light, with tonics generally, to be the proper means. But without experience we could not have anticipated that medicines containing iron should possess such remarkable efficacy in relation to this element of disease. In many cases of chlorosis, under the use of any suitable preparation of iron, the complexion will change from waxy to ruddy, in three or four weeks' time. This subject will again come under our consideration in connection with anæmia."

Fibrine.—"An *excess of fibrine*, and of the colorless or lymph-globules, exists in inflammatory diseases, especially those of a sthenic character, and acute rheumatism. In some cases, MM. Andral and Gavarret found it as high as ten per thousand. The proportion of fibrine is also increased during the latter months of pregnancy. These facts have been long known; but in addition to these MM. Andral and Gavarret found an excess of fibrine in tuberculous diseases, in which we have noticed there is a defect of red particles. Mr. Gulliver has observed the increase of white globules in blood drawn in inflammation; and I have noticed this as occurring in the vessels."

"*Deficiency of fibrine* is of frequent occurrence in many diseases and temporary conditions bordering on disease. Its sign is fluidity or imperfect coagulation of the blood when drawn. As venous blood contains less fibrine than arterial, so the quantity is absolutely diminished when the blood is more venous than usual, as in cases of asphyxia or impeded breathing; and in those of cyanosis, in which the venous blood becomes mixed with the arterial through an unnatural opening. Excessive bodily fatigue and want of sleep expend the fibrine: hence the blood remains fluid in animals hunted to death. It was stated by John Hunter that the same thing is observed in animals killed by lightning; but this is not always the case. In many instances the blood is found fluid in cases of death from poisoning and other sudden causes. In some of these the absence of fibrine may be attributed to the impeded respiration which is the immediate cause of death, as in some cases of death from hydrocyanic acid, opium, strychnia, apoplexy, dividing the pneumo-gastric, (Dupuy), &c. There is, however, some uncertainty about these facts. (See Mr. Blake's experiments mentioned further on). But in others, as in poisoning with arsenic, sulphuretted hydrogen, and some other pernicious agents, the fluid state of the blood must be ascribed to a more direct operation on the blood itself. So likewise in adynamic fevers, which arise from a peculiar poison, the fluidity

or imperfect coagulation of the blood is one of the most remarkable conditions, and seems to be a chief cause of the hæmorrhages, petechiæ, and vibices, which sometimes occur in these fevers. In a case of very low typhoid fever, Andral found the proportion below one in one thousand. The artificial imitations of these fevers produced in dogs inoculated with various morbid or putrid matters, or confined over their exhalations, in the experiments of Gaspard, Majendie, Gendrin, Leuret, and Hamon, exhibited a similar absence of fibrine in the blood."

"*Alterations in the quality of the fibrine* introduce to our notice the important morbid appearances presented by the buffy coat and contraction of the clot of blood.

"As the consolidation of the fibrine is the cause of the coagulation of the blood, so differences in the coagulum represent variations in the properties of the fibrine.

"A large firm coagulum indicates an abundance of fibrine, as well as of red particles, and is commonly presented by healthy blood. A loose coagulum implies a deficiency of fibrine. A small firm clot betokens a proportion of fibrine exceeding that of the red particles; but the smallness of the clot points to another property of fibrine, which is of excess, during and after its consolidation. Again: in this case as in others, the upper part of the clot is commonly more contracted than the lower portion; it is also firmer and contains more fibrine, whilst the lower abounds more in red particles. Here there is evidently a tendency to a separation of the red particles from the fibrine. In other cases, again, the separation is to some extent complete, the red particles subsiding, whilst the fibrine rises to the surface and on coagulating forms at the top of the clot a layer of a light yellow or buff color, commonly known by the name of the *buffy coat.*"

"*Remedial Agents.—Excess* of fibrine is less directly reduced by blood-letting and low diet, than is excess of the red particles; yet these are the chief means of lowering the quantity of fibrine in the blood. It would probably be found that purgatives and other remedies which increase much the more solid secretions, diminish the fibrine. A similar property has been ascribed to mercury, to alkaline salts, to iodine, and to antimony. I know of no positive facts in support of this notion; but it is favored by some analogies, and seems well worthy of experimental investigation. The operation of salts and alkalies in this way was probably suggested by their property of dissolving fibrine out of the body.

"According to the views of Liebig, subsisting chiefly on saccharine, amylaceous, or gelatinous articles of food, must reduce the fibrine and albumen of the blood; and such food is found by experience to be the best in inflammatory diseases, in which excess of fibrine is a chief element. Is the reputed efficacy of the 'cure de raisains,' in tuberculous disease, connected with the absence of protein compounds in the food? Bodily exercise reduces the fibrine, and may be advantageously employed with this view in sthenic plethora; but is not admissible in inflammatory diseases. Neither can we suggest any practicable mode of lessening the fibrine by lowering the function of respiration, on which its supply seems to depend, unless narcotics, which impair many organic functions, have some action of this kind. The known utility of opium, aconite, &c., in rheumatism and low forms of inflammation, in which excess of fibrine is a constant element, makes this matter deserving of some research.

"*Deficiency of fibrine* is to be remedied by assisting those functions on which its supply depends, particularly those of digestion, respiration, and assimilation, and by avoiding its expenditure in too much exercise and other exhausting processes. If the digestive organs will bear them, meat, eggs, bread, and other articles of diet abounding in the protein compounds, should be taken. The digestive and assimilative functions may be assisted by stimulants, bitters, quinine, and the mineral acids, which from their power in stopping passive hæmorrhage, and in augmenting the muscular strength, seem to promote the formation of fibrine more directly than by their mere operation on the digestive organs. To improve the function of respiration, besides attempts to remove or diminish any disease from which it may suffer, the free access of pure cool air to the lungs should be secured. The injurious effect of exertion is exemplified in the relapses which it often induces in continued fever, ... which defect of fibrine in the blood is a chief element. Fatigue of every kind, and wakefulness, should be carefully avoided, and sleep obtained by narcotics, if it do not come naturally. In case of any deficiency of fibrine from the presence of a febriferous or putrescent poison in the system, it is not to be expected that fibrinous food, rest, or any other means, can remove the deficiency, so long as the poison remains in active operation. This poison, by its septic or analogous influence, interferes with the vital process by which the fibrine is formed. But no sooner does the influence of the poison subside, as evidenced by improvement in the symptoms, than the quantity of fibrine

increases; and this sooner than could be explained by any increase of nourishment taken. (Andral and Gavarret)."

"*Excess of albumen* exists in most cases of inflammations and fevers, especially during their more active stages. Its increase is not, however, in proportion to that of fibrine. Its relative proportion is much increased in epidemic cholera; but this is rather due to the removal of the water of the blood. Albumen is the principle least affected in its proportions by disease. Very poor living, long continued, extensive hæmorrhages, and other drains on the system, will pretty surely reduce it in common with the other animal principles of the blood; but good living has less power in raising it above the natural standard.

"*Deficiency of albumen* in the blood is most remarkably met with in cases of albuminuria, or diseases of the kidney with coagulable urine; and this deficiency precedes the diminution of the red particles, which takes place in the advanced stages of this disease. Dr. Bright found in a patient with albuminuria, the specific gravity of the serum as low as 1013. Dr. Babington found the specific gravity of the serum in a case of diabetes as low as 1024; in another 1027, although that of the blood was higher than usual, 1061. In this case the serum was milky. In their latter researches, MM. Andral, Gavarret, and Delafond discovered a remarkable diminution of the albumen in dropsical sheep affected with the rot, (a water state of the blood, with distoma in the liver). Sheep in a cachectic state, with a deficiency of red particles, but without entozoa, were not dropsical, and in these the albumen was found undiminished. It is therefore most probable that the cases of cachexia, or anæmia, attended by dropsy, owe this concomitant to a defect of albumen in the blood. It is this principle chiefly that gives the blood liquor its spissitude, which renders it more fit to pass along the vessels, and prevents it from transuding through their walls. This deficiency of albumen, therefore, seems to be a chief constituent of the diathesis."

The increase of fat in the textures is preceded, Dr. Williams supposes, by its presence in excess in the blood, and is favored by a diet composed of oleaginous, saccharine and farinaceous substances. Exercise counteracts the tendency to it, "probably by causing the combustion of the fat in respiration, whilst muscular textures are increased by the same influence."

The salts of the blood are diminished in many diseases, but it is not known that they are augmented by any. Their deficiency has been particularly remarked in malignant cholera, to which circumstance the temporary efficacy of injection of saline solutions into the veins of the cholera patients may be fairly attributed. Some pathologists have stated that a similar change in the blood occurs in typhus and yellow fever, but this assertion seems not to have been supported by the researches of Andral.

The proportion of water in the blood increases with the diminution of the animal constituents. It is thus found in excess after extensive hemorrhages, and in chlorosis, and other states of the system marked by anæmia. Andral cites the case of a woman in whom the blood, after repeated menorrhagias, contained, in red globules, only 21 parts; in fibrine 18; in solid matters of the serum 61; the water being 915 in 1000. The tendency is to dropsy, in such a condition of the circulating fluids. The opposite state of the blood exists in cholera, in which this fluid becomes so thick that it finally circulates with difficulty, as is evinced by the lividity, feeble pulse, and other signs of obstructed circulation.

Under the head of *changes in the blood by respiration*, we meet with the following instructive observations:

"In cases of cyanosis, (the blue disease, in which, from malformation of the heart, some venous blood passes into the arteries), we have the opportunity of observing the more essential effects of defective arterialization of the blood. Individuals thus affected are in a lower scale of animation. The slower processes of nutrition and secretion seem to go on pretty well, but the muscular power is low; slight exertions bring on symptoms of faintness, palpitation, suffocation, or insensibility; the animal heat is lower than natural, and there is greater suffering from the influence of cold. In short, all the powers of body and mind are slender, and are easily disordered by any circumstances which tax their activity. In the few that reach mature age, there is no sexual passion, which seems to be a happy provision against the chance of perpetuating a malformed race—human reptiles. The subjects of cyanosis are said to be very liable to hæmorrhages, and when these occur spontaneously, or from accidental causes, it is very difficult to stop them. This must be ascribed to a defect

of fibrine which we have already found to occur where the changes of the blood by respiration are imperfect. The same defect occurs in the fœtus.

"In connection with the scantiness of fibrine in the blood, when the respiratory changes are defective, we must notice the weakness of the muscles generally, which are probably nourished by the fibrine. This weakness is often observed in the subjects of extensive disease of the lungs, especially emphysema. In these same subjects the deposition of fat is, on the other hand, often excessive, which agrees very well with Liebig's idea that respiration directly consumes the oily parts of the blood; the respiration being defective, the fat accumulates."

Important changes in the blood are effected by the secretions, of which a very striking instance is afforded by defective action of the kidneys. These organs having been extirpated, the animals subjected to the operation died in a few days, affording after death evident traces of urea in the blood. Defective secretion of bile must be attended by many serious evils, but the effects have not been so accurately determined. Our author believes that some connexion exists between this state of the liver, and purpura, in several cases of which disease he noted a want of biliary secretion. The function of the skin when impaired is apt to be followed by rheumatism, urinary disorders, and cutaneous diseases. The reason assigned for this by Dr. W. will shock the opposers of the humoral pathology. He ascribes it all to the retention in the blood of the lactic acid and lactates of soda and ammonia, proceeding from the transformation or decay of the textures, along with the perspirable matter. "Hence," he says, "the remedies for rheumatism should not be merely antiphlogistic, but also of a kind calculated to eliminate the morbid matter from the blood."

In chapter III we have an account of "*Secondary or proximate elements of disease consisting of two or more primary elements.*" *Anæmia* is one of these—a condition, the peculiarity of which is a deficiency of blood. It is often symptomatic, but sometimes arises without any other known disease. Dr. Clymer says:

"The fundamental and constant character of anæmia is the diminution in the red corpuscles of the blood. Women are more subject to it than men, although these may be attacked with spontaneous anæmia at all ages. The clot is small, but firm and dense, swims in a large quantity of colorless serum, and presents on its surface a well-marked buffy coat, which, however, differs from the buff of inflammatory blood by a gradual termination in the red-mass, and not by an abrupt, well-defined line."

Hyperæmia, the blood in excess, is a most frequent element of disease. It embraces general plethora, congestion, and inflammation, with the results—hemorrhage, flux, dropsy, &c. It will be impossible, in the limits assigned us, to give an analysis of the interesting matter presented under each of these heads. We shall be compelled, therefore, to select a few of the most practical portions.

On the treatment of congestions, the following judicious remarks are made:

"The operation of several of the foregoing agents, in combination or succession, is generally more effectual than that of single ones in the cure of congestions. Thus congestion of the liver may resist the action of mercury, and may even be aggravated by it, until the vascular distention has been partially reduced by local blood-letting or derivants; then the mercury, by increasing the secretion, reduces the remaining congestion. Congestion of the kidneys is augmented rather than diminished by diuretics, which then fail to increase the secretion of urine, but may only render it more albuminous. But after some relief has been given by cupping to the loins, and hydragogue purgatives and diaphoretics, then some diuretics, particularly digitalis and cantharides, cause a freer flow of urine, with less albumen. The same point might be further exemplified; but it is unnecessary to multiply instances."

Hemorrhages constitute a most embarrassing class of diseases. Nothing beyond the outlines of treatment can be laid down in a work like this. They are thus given:

"We have now to consider the means calculated to restrain all kinds of hæmorrhage, and which is especially opposed to the causes which more immediately determine this result of disordered circulation. If blood-vessels are softened, brittle,

or actually ruptured or ulcerated, a chief thing to be done is to diminish the quantity of blood sent to them; and, besides by blood-letting, this may be effected by pressure, posture, cold and astringent applications, and means calculated to tranquilize the whole circulation. Thus epistaxis is sometimes arrested by pressure on the carotids; uterine hæmorrhage by pressure on the abdominal aorta, or by elevating the pelvis; hæmoptysis by keeping the chest high; and in all cases of hæmorrhage, perfect stillness and a cool regimen should be observed.

"The other pathological condition which favors hæmorrhage, the altered state of the blood, is perhaps more directly influenced by the remedies called styptics. Most of these remedies are astringents, causing contraction of the tonic fibres of vessels and other parts, but some of them also coagulate the blood, and in both these ways they may tend to restrain hæmorrhage."

Concerning the pathological causes of flux and dropsy, the following remarks occur:

"We have thus traced flux and dropsy in common, to elements previously considered, hyperæmia in some of its forms, together with a diseased condition of the blood itself, dependent on defective secretion, or defective nutrition or assimilation. The latter element, although not essential to the production of fluxes or local dropsies, is the chief cause of general dropsy, and constitutes the dropsical diathesis. If we endeavor further to distinguish between the pathological causes of flux and dropsy, we find from observation that flux more commonly results from determination of blood or congestion, with a lax state of the solids, whilst dropsy is rather associated with the altered condition of the blood just noticed."

The subject of inflammation occupies many pages of this work. The manner in which it is treated cannot fail to excite the admiration of the intelligent reader. We earnestly recommend this, as every other part of Dr. Williams' excellent Principles of Pathology, to the diligent perusal of every physician, who is not familiar with the accessions which have been made to medical science within the last few years. Y.

Selections from American and Foreign Journals.

On the Effects of Opium on the Infant Subject. By John B. Beck, M.D., Professor of Materia Medica, &c., in the Col. Phys. and Surg., N. Y. The following practical observations are extracted from a paper in the January number of the New York Journal of Medicine. The subject is one of much concern to the profession and the public:

"With regard to the effects of opium on young subjects, there are two facts which seem to be well established. The *first* is, that it acts with much *greater energy* on the infant than it does on the adult; the *second* is, that it is more *uncertain* in its action on the infant than the adult. It is in consequence of these peculiarities attending its operation on the infant, that even the smallest quantities have not unfrequently produced the most unexpected and even fatal results. Of this, almost every physician must have seen some melancholy instances. Dr. John Clarke states, that 'half a drachm of genuine syrup of white poppy, and, in some instances, a few drops of Dalby's Carminative, have proved fatal, in the course of a few hours, to very young infants.' In one case, he says, forty drops of Dalby's Carminative destroyed an infant. Mr. Marley says, 'I have known three or four instances where the most dangerous symptoms were produced by Godfrey's Cordial and Dalby's Carminative; two nostrums which have no doubt added considerably to the mortality of infants.' In a case that fell under his observation, the most rapid and alarming symptoms followed the exhibition of an ordinary dose of syrup of poppies. In another case, he knew half a small teaspoonful of the syrup of poppies prove nearly fatal to a child eight or ten days old. Thirty-five drops of Dalby's Carminative, he has known to prove fatal to a young child, while, in

other cases, larger doses have been given without any unpleasant effects. The same writer relates the case of an infant, nearly poisoned, by considerably less than half an ordinary-sized tea-spoonful of paregoric. Dr. Bard says he once knew an infant of several months old killed by ten drops of laudanum, and another brought into very great danger by less than two drops. Dr. Montgomery states that he has known more than one instance in which a tea-spoonful of the syrup of poppies has proved fatal to a healthy child. Professor Hamilton relates two cases, in which four drops of laudanum proved fatal to children some months old. Dr. Merriman reports two cases, in which a dose of Godfrey's Cordial proved fatal. He also states that he once saw a child in the month thrown into a state of excessive stupor, by taking one dose only of a mixture in which there were four drops of laudanum; the actual quantity swallowed could scarcely have amounted to one drop. Dr. Christison states that 'the administration of three drops of laudanum in a chalk mixture for diarrhœa, to a stout child, fourteen months old, was followed by coma, convulsions, and death in six hours.' In another infant, a few weeks old, death resulted from taking four drops of laudanum. Dr. Ryan states that he has known one drop of the 'sedative liquor of opium' narcotize an infant. Of laudanum, two drops have been known to kill an infant, nay, in one case, a single drop destroyed a new-born infant. I have myself seen a young child narcotized by about twenty drops of paregoric. The foregoing facts are sufficient to show that opium acts with peculiar energy and uncertainty upon the infant subject. The causes of this would seem to be the following:

In the *first place*, the great difference in the physical organization of the *infant* and the *adult*. In the young subject the brain and nervous system are much more impressible, and the slightest causes, as we know, will sometimes derange them. Besides, in the infant, the circulation is more rapid—there is a greater proportionate quantity of blood circulating in the brain, and hence a much greater tendency to cerebral determinations. From these peculiarities in the organization of the infant, it happens that convulsions are so much more common in the early periods of life. Thus, for example, the irritation of teething—of worms or crude matters in the intestines, is frequently followed by convulsions. Intermittent fever, which in the adult commences with a chill, in the child is frequently ushered in by a convulsion. Scarlet fever, too, in the child, not unfrequently commences with a convulsion, while in the adult I have never witnessed such an occurrence. Now, with such

peculiar predispositions characterizing the system in infancy, it may readily be conceived how it is that such an article as opium should act with more power at that period than in after life.

"In the *second place*, the difference in the *temperament* or *constitution* of infants. In the adult, we know as a matter of fact, that opium differs greatly in its effects in different constitutions. Thus, as a general rule, the sanguine temperament does not appear to bear the use of this drug as well as the melancholic or the nervous. In the former, it is much more apt to produce cerebral disturbance, and in large doses is more likely to prove injurious. Now, infants differ from one another as much, if not more, than adults, in these peculiarities of constitution, and, as a matter of course, the difference in the effects of this article must be greater. Besides, as these peculiarities and differences can only be detected by actual expeperience, and as we cannot of necessity have the same benefit of experience in the case of infants, it is obvious that the difficulty of justly appreciating the action of this drug on the infant must be greatly increased. A greater or less degree of uncertainty, therefore, must necessarily from this cause attend its use in the early periods of life.

"In the *third place*, the actual state of the system as to disease. There is no circumstance which modifies the effect of opium in so great a degree as this. In the adult, we see this continually. In some conditions of the system, even small doses produce the most unpleasant effects, while in other conditions, immense quantities may be given with little or no effect; thus, for example, when severe pain or spasm are present, quantities of this article can be borne, which under other circumstances would prove exceedingly injurious. As illustrative of this, I quote an intesesting case related by Dr. Percival. He states that a young man was admittted into the Manchester Hospital, on account of a violent spasmodic disease which recurred periodically in the evening, and after trials of various remedies, doses of opium sufficiently large to mitigate the violence of the paroxysm were ordered, and he took twenty-two grains every night during a week, without producing any soporific effect. On the eighth night he had no return of the spasm. He nevertheless took the opium, and in the morning was found dead. In this case, a great and sudden change had unquestionably taken place in the nervous system of the patient, and to this must be ascribed the difference of effect. If in the adult, the state of the system makes such a wide difference in the effects of this article, how much more so must all

this be the case in the sensitive infant; and it is by not duly regarding this, that such unexpected results sometimes follow from the use of opium. Thus, for example, a child laboring under the acute pain of colic will tolerate doses, which, in the ordinary condition of the system, might prove destructive.

"There is one condition of the young subject particularly in which this remedy is frequently resorted to, in which this is strikingly illustrated. I mean that state of exhaustion which arises from diarrhœa and other bowel complaints. In this state the head is very apt to become affected, and if opium be given with a view of checking the intestinal discharges, not unfrequently insensibility gradually creeps over the little sufferer, and in a short time death is the result; and this, too, even when the quantity used has been apparently adapted with great nicety to the wants of the case. Every observing practitioner must have witnessed such instances. Now in many cases of this kind, there can be no question that the child sinks under the sedative influence of the opium; and the reason is, that, in the exhausted state brought on by disease, the system succumbs much more readily to the narcotic effects of this article, than it does in other conditions of the system.

"The foregoing considerations appear to me sufficient to account for the greater power, as well as uncertainty in the action of opium on the infant, than on the adult.

"If it be a fact, then, that opium acts in this way upon the infant, it appears to me to involve inferences of great practical moment, which cannot be too deeply impressed on the mind of the young practitioner.

"1. That its use should *be avoided as much as possible* in the young subject. I will not say that it ought to be interdicted altogether, because if used with discretion, it is a remedy of great value in many of the diseases of infants, but it should never be used unless there exists a strong and manifest necessity for it.

"2. Great caution should be exercised in the form in which it is administered. No preparation should ever be used, which *is not of a known and determined strength.* In England, the *Syrup of Poppies* is the preparation most used for children. In this country, it is also used, but not to the same extent. This is a pleasant and mild opiate, and on these accounts is well adapted for children. It is liable, however, to great objections. Besides, being apt to ferment and spoil, it is very *variable in its strength.* On this account it is really a very dangerons article; and many cases are recorded (some of which I have already related) in which fatal results have fol-

lowed the use of it, even in moderate doses. Another objection is, that it is liable to sophistication. Thus a mixture of *laudanum and simple syrup* has sometimes been sold for it. In the London Medical Gazette, (May, 1831, p. 253), a case is related, where a child died in consequence of a small dose of this latter compound having been given by the mother, who had previously given the same quantity of the pure Syrup of Poppies with advantage.

"The best preparations for children are *laudanum* and *elixir paregoric*. These are of known strength, and susceptible of division into the minutest doses. *Dover's powder* is another preparation, which may be given to children. It may readily be divided into the smallest doses, and it seems to act much more mildly than equivalent doses of simple opium. It need hardly be stated that all such articles as Godfrey's Cordial, Dalby's Carminative, &c., should be totally discarded from regular practice. Besides being uncertain in their strength, and on that account exceedingly objectionable, the sanction thus given to them encourages their use by persons out of the profession, who cannot be supposed to be acquainted with the dangerous effects of opium on the infant system.

"3. In very young subjects, we should never begin the use of this article, except in *very small doses*. Although most practical writers lay down cautions about the use of opium in these cases, yet it does not appear to me that these cautions are sufficiently precise. Most of the writers to whom I allude, specify doses as suitable to certain ages, without stating, that even these doses may, in certain conditions of the system, prove just as injurious as much larger doses. To illustrate, I will quote the directions given by one of our standard authorities. Dr. Dewees says, 'the proper dose of laudanum for infants and children may be reckoned at the following rates. Half a drop for a child under ten days old; a drop, for one from that period to the end of the month; a drop and a half, or two drops, for one from that period to three months; three drops from this to nine months, &c., &c.' 'When laudanum is to be used as an injection, we may safely increase the quantity three or four fold' He adds: 'These doses are prescribed for children who are altogether unused to the use of this drug; the power of bearing more, may be rapidly increased by habit.' Now, it appears to me that a more dangerous set of directions could not well have been given. Although many children may bear the quantities here specified without injury, yet evey now and then a case will occur, in which the most serious results will follow; and it is against these that the ne-

cessary precautions should always be taken. In the case of a new-born infant, we are entirely ignorant of the manner in which such an article as this will affect it, and it therefore will not do to begin with *average* doses. To practise safely, we must feel our way with doses much smaller; and then we shall have some guide, and the only guide which the nature of the case admits of, to make the necessary increase in the quantity to be given. Under no circumstances, as a first dose, ought half a drop to be given to a child under ten days—or a drop to a child during the first month. One eighth of a drop is sufficient to begin with. The quantity, too, directed for an injection is too large. Instead of three or four times the quantity given by the mouth, as far as my experience goes, double the quantity is quite sufficient.

"4. The doses of opium should not be repeated *at too short intervals.* This, too, is a point which is not sufficiently guarded by some practical writers. One writer, for example, after specifying the quantity suitable for a child of two and three months, adds, that 'this is not to be repeated in less than an hour.' If this means anything, it means, of course, that after the lapse of an hour, the dose may be repeated with safety. This, however, will not be sustained by experience. Even if a first dose does not narcotize, it frequently produces a degree of listlessness and indifference to food on the part of the child, which, if it be kept up by repetitions of the opiate, may eventually prove just as destructive. This is strikingly illustrated in those states of exhaustion from diarrhœa, where the due supply of nourishment is so essential to recovery. Where repeated opiates are necessary, the intervals between the doses should be long enough to enable the child to recover somewhat from the sedative influence.

"Before concluding these observations, I cannot refrain from making a remark or two in relation to the use of this article by persons out of the profession. The mischief that is done in this way is incalculable. If, in the hands of those acquainted with its virtues, opium is an article so dangerous and uncertain in its action, what must it be in the hands of the ignorant; and yet we see it given to infants, day after day, and night after night, by nurses and mothers, not merely without the consent of the physician, but sometimes contraay to his express injunctions.

"There are two ways in which it is used by persons out of the profession, in both of which it proves injurious to the child. The first is by giving it in occasional doses; the second, by giving it constantly. The first is bad enough, but the

second is still worse. The first, now and then, unexpectedly destroys a child; the second is followed by a train of the most disgusting consequences, worse, if possible, than those of habitual drunkenness in the adult. Fortunately, these latter cases are not of such frequent occurrence; occasionally, however, they are met with where the parent, for the purpose of quieting it, has been induced to keep a child for months under the daily influence of paregoric, Godfrey's Cordial, or some other opiate nostrum. In these cases, the effect is to stunt the growth of the child; it is emaciated and puny; the skin is flabby and shrivelled; the lips are bloated, and the countenance sallow and wrinkled. There is an absence of all intelligence, and the whole appearance is haggard and aged, presenting a sort of 'miniature of old age.' Not long since I witnessed a case of this kind, in which a child of fourteen months old did not appear larger than one of two or three months. With the exception of one month, it had been kept upon paregoric almost every day since its birth. The mother was a poor woman, and on inquiring of her the reason, she stated that she had resorted to this method of keeping the child quiet while she attended to her work.

"Of the extent of the mischief annually perpetrated by the unprofessional use of opium, some idea may be formed from a report made to the House of Commons, containing returns from the coroners of England and Wales, of the inquisitions held by them during the years 1837 and 1838, in cases of death by poison. The total number of deaths by poison in these years was 543, of which 52 were very young children, most of them at the breast, in conseqgence of opium, or some of its preparations having been given by mothers and nurses, in ignorance of its effects. In addition to this, 20 more were destroyed by opium or laudanum administered in mistake for other medicines.

"These facts are certainly appalling; and if any subject connected with medical police is worthy of the atttention of the public authorities, it is certainly this. How the evil is to be corrected, it is not easy to say. Much, however, might be done by the proper dissemination of information on the subject. In most cases where opium is administered to children by persons out of the profession, it is disguised in the shape of some nostrum, so that they are not aware of what they are giving, and even when they are aware of it, they are not acquainted with the dangerous effects of it on the infant system. If parents and nurses were made better acquainted with the fact that such articles as Godfrey's Cordial, Dalby's Carminative,

and most of our medicated lozenges and candies, owe all their composing properties to the opium which they contain, and that opium even in small doses is frequently a deadly poison to the infant, one would suppose that it could not but exert a salutary influence in correcting, to a certain extent at least, the evil of which we are speaking, and the dissemination of this kind of knowledge by the proper authorities would confer a lasting benefit upon the community.

"I have thrown together the preceding observations because the subject is one of interest and importance, and because it appears to me that it has not sufficiently attracted the attention of the profession."

On the Influence of Opium upon the Catamenial Functions.—In the same number of the New York Journal we find a report of several cases in which the catamenial discharge was suppressed by the use of opium. The facts are novel, and may lead to valuable results in practice:

'Case I.—E. L——d, a middle sized, plethoric young woman, *aet.* 24. In 1837, having procured an abortion by means of some powerful drug, she sent for a physician, who gave opiates in the course of his subsequent treatment. From that time until April, 1843, she resorted daily to laudanum, and gradually increased the dose to four ounces per diem. Her appearance last April was as follows: look, stupid; complexion, florid; person, fat; bowels, regular; and she ate very little food. Her catamenia, which had been regular until January, 1837, have never appeared since. I believe she is now in the Magdalen Asylum at Yorkville.

Case II.—E. M——l, *aet.* 23, of middle size and sanguine temperament. About three and a half years ago, during an attack of acute rheumatism, laudanum was freely administered to her. During her recovery, and until March, 1843, she continued the daily use of the tincture of opium; and from 1841 to 1843, she drank from four to six ounces per day. In March last, she had clear complexion, ruddy cheeks, good general health, bowels regular, and ate little food; but from the date of her rheumatism, until March, 1843, her catamenia did not appear, notwithstanding she had been perfectly 'regular' until that attack. She went into the country, in April, 1843, where she could not obtain any laudanum; but she applied to a physician, who prescribed an emmenagogue, which was followed, at first, by a slight, and subsequently, by several profuse, but regular, returns of the catamenia. She has recently (July 20th) re-

turned to this city, and resumed a very moderate allowance of laudanum.

"Case III.—S. S——h, a short, fleshy, plethoric young woman, (colored), *aet.* 26. Until July, 1837, she had menstruated regularly; but, at that date, she commenced the daily use of laudanum to allay the pain of *onychia maligna* of the great toe of the left foot. She continued drinking from two to four ounces of tr. opii, per diem, until June, 1842. During these five years, although her general health remained unimpaired, her catamenia did not appear. At the last-named date, she was cured of the *onychia*, by an operation. The succeeding month, and every month since, the menses have punctually appeared, without the aid of any medicine.

"Case IV.—R——n, *aet.* 25, of middle height, robust, sanguine temperament; has a child four years old. About two years ago, while confined to her room by a fracture of the left tibia, she commenced using opium to relieve pain and restlessness. She has sometimes used twenty or thirty grains of opium per day, for two or three months steadily; at other times, she quitted the stimulant entirely, for the same length of time. While she continued using the opium daily, her catamenia did not appear; but, on forsaking the drug for a month or two, she becomes 'regular' without an emenagogue. Her general health is good, and she has not been constipated at any time.

"Case V.—E. R——, *aet.* 18, a young, unmarried female (colored), applied to me in May or June, 1841, for relief from an increase in the quantity and frequency of the catamenia. She was pale, thin, and of the nervo-sanguine temperament. Pulse frequent, but soft; head dizzy. She has a sister and brother; both are married and have progeny. There were no coagula in her uterine discharges, and except physical weakness, her general health was good. Having tried the ordinary treatment without success, I gave her a combination of acetate of lead, camphor, and *opium*, in minute, frequently repeated, doses. I commenced the use of this combination on the fourth day of the persistence of the discharge, and continued the remedy until the discharge ceased. She was greatly relieved by this practice. Shortly afterwards, on leaving the city, she procured a copy of the prescription; and, without my knowledge, continued using the pills (as her sister informed me lately) nearly a year. The catamenia gradually diminished, and, at the end of a year, entirely ceased. She was subseqnently (Sept. 1842) married. Her general health remains good; her person is thin; but menstruation has not recurred, nor has she

yet become pregnaut. Since abstaining from the pills (Aug. 1842), she has repeatedly resorted to emmenagogues, prescribed by various physicians, but without success.

"*Remarks.*—The first four of the above females are courtezans. But their vocation cannot have been the cause of the arrest of their menses; for I can say, from a somewhat extensive experience in the Lock Hospital, at Glasgow, that this unfortunate class have no peculiar liability to suppressio mensium. E. M——l (case II) informed me that she is acquainted with several opium-eaters, in all of whom the menses have been arrested, as they believe, by opium.

"Without assuming from so few cases, that the daily use of opium will *always* arrest the catamenia, I submit them, in the hope that they may attract the attention of medical men to whatever facts may be within their reach. It will be interesting to ascertain, in relation to married women, who have borne children previously to a resort to opium-eating, whether this habit arrests their catamenia, and their capacity for conception; or whether it arrests the one and not the other. It may also be worth the inquiry, whether opium, in skilfully regulated doses, may not be used as a means to bear women safely through the critical disturbances which occur at the 'change of life.'

"One circumstance is common to all the above narrated cases, viz., the arrest of the catamenia was not followed by the vital disturbances which attend suppression from other causes; or, in general terms, opium, in daily doses, arrested uterine periodicity without disturbing other ordinary vital functions. Here we have an analogy with other well known effects of opium; for this drug, to a great degree, arrests hunger, which, in the present state of civilized society, is a *periodic habit*, for it is seldom allowed to become an actual *want*. In a therapeutical point of view, opium exerts an almost uniform influence as an arrester of periodicity. As a narcotic, its influence is not uniform, for it does not always produce sleep; and I am inclined to the belief, that when sleep does follow its exhibition, it is rather a consequence of the absence of (an arrested paroxysm) than of a direct narcotic influence."

Dr. Gregory on Small-Pox.—[The following remarks are taken from a notice of Dr. Gregory's Lecture on the Eruptive Fevers, in the London Medical Gazette, Oct. 27, 1843. Dr. G. has seen more of small-pox than any other practitioner of the

present day, and consequently his opinions are entitled to great weight.—*Med. Ex.*]

The miasm, as it were, poisons the blood, altering its properties and power of coagulating in a remarkable manner. Among other instances of this the author mentions that he was last year called into consultation with Dr. L. Stewart, regarding a lady in small-pox, whose whole body was of the color of indigo, so that he took her at first for an African. She conversed with our author quite tranqilly but a few hours before her death, "proving that the nervous system is not necessarily, nor is it even usually, implicated in the petechial form of small-pox."

In the cases of adult females, Dr. Gregory states, that when thus attacked menorrhagia is almost always present, and if they be pregnant, they almost invariably miscarry, the fœtus dying in utero. This is what used to be called black small-pox by the older writers.

Ophthalmia is a very common accompaniment of small-pox; but it is a mistake to suppose (as is often done) that this arises from the formation of pustules on the cornea and conjunctiva. There is no specific inflammation of the eye in small pox, but the ophthalmia, so destructive of vision, is a sequela of the disease. It frequently sets in about the tenth day, and runs its course so rapidly that the eye is destroyed within forty-eight hours.

The chest also is frequently affected; but the abdomen is peculiarly exempt from inflammation in small-pox; thus we are told the idea of anything like pustules being found on the mucous membrane of the stomach or bowels is erroneous, the appearances in reality being "in all respects" the same as are met with in typhus fever.

"The whole human race, with very few exceptions, is susceptible of this disease, and the inhabitants of different regions seem to be in this respect on an equal footing. To this general rule there are several exceptions, and persons have been known to go through life without ever taking the disease, though frequently exposed to it. Again, some persons appear unsusceptible of the disease at one time, and yet take it at another. Dr. Gregory gives an example of this: A lady residing at Salisbury was inoculated for small-pox, in 1804, at the age of 83, and took it. She had brought up a large family, many of whom had passed through small-pox, and been attended by her, without her becoming affected with the disease. It has been said that an exemption from the disease

prevails in particular families, but Dr. Gregory states that this idea is entirely without foundation.

That small-pox may occur a second time in the same individual is a well-known fact; but our author states it to be much less frequent than is supposed "At the Small-Pox Hospital very few present themselves who affirm that they have previously undergone small-pox; and of the few who do, but a very small portion can stand the test of a rigid scrutiny." Louis XV. of France is said to have died of a second attack of small-pox, but Dr. Gregory (who has examined the details carefully) is of opinion that the first attack was not really variola.

The power of medical treatment over small-pox is by no means so striking as in inflammation; nevertheless, remedies exert a certain degree of influence upon the disease, and the things to be attempted are thus enumerated

1. To moderate the violence of febrile excitement whenever we meet with it.

2. To check and relieve local determinations of blood, at whatever period of the disease they arise.

3. To support the powers of the system when they flag, either from the malignity of the poison or the long continuance of the disorder.

4. To combat, by appropriate means, concomitant disease.

One of the most interesting questions certainly connected with the treatment of small-pox relates to blood-letting. On this point Dr. Gregory makes the following observations:

"Some writers, in their zeal for blood-letting, have tried to persuade themselves that it is the only measure which can be relied on to lessen confluence, and to prevent the development of pustules in the mucous membrane of the throat and trachea. This opinion is altogether erroneous. Bleeding has no effect on the quantity of eruption, whether cutaneous or mucous. The most confluent eruption has succeeded to the most vigorous employment of the lancet. To bleed, therefore, merely because small-pox is anticipated, with the view, thereby, of preventing confluence, is uselessly to expend that power which will be required for the repair of injury to the surface. You will keep these general principles before you, and take care that in your efforts to diminish internal congestion you do not materially impair constitutional power.

"If the stomach, during the initiatory fever, remains very irritable, rejecting everything that is taken, even the saline effervescing draughts with laudanum, which you will naturally feel disposed to try, I recommend you to apply mustard poul-

tices to the epigastrium and to the feet, and to promote eruption by the pediluvium.

"Again: if the circulation at this period be languid, if the pulse be small and feeble, the skin pale, and the extremities cold; if the patient lies on his back, sunk and exhausted, let him have immediately warm brandy and water, cover him with bedclothes, apply mustard poultices to the centre and extremities of the circulating system, and give thirty drops of laudanum, to be repeated in four hours, if necessary. This cordial plan of treatment must often be continued for several days, when the eruptive nisus is accompanied with depression, and nature appears so obviously unequal to the effort."

In ordinary cases, the great object is to lessen the patient's suffering, without interrupting the process of pustulation; and, if there be nothing particular, a few saline draughts, and a little castor-oil, so as to keep the bowels free, are all that is required. The petechial form of the disease admits, he thinks, of no essential relief from medicine. "The loss of a little blood from the arm has appeared to me more effectual than any other measure." In all cases a warm bath is advisable before the patient again mixes in society.

Where, in the process of the secondary fever, apoplexy, peripneumony, or pleurisy comes on, blood may be taken freely; but in erysipelas, bark and wine are sometimes required. In ophthalmia (one of the most serious evils which follows small-pox) it is sometimes necessary to sacrifice the eye to save the patient's life—the state of whose system prohibits the requisite depletions.

In regard to the eruption itself, Dr. Gregory informs us that benefit is frequently derived from covering the surface with dry powder, such as starch; while fomentations and poultices are the only local means of any service in the abcesses and erythematous inflammations which sometimes attend the stage of secondary fever.

All the plans hitherto suggested for preventing pitting, have, in our author's hands, proved unavailing.

On the subject of inoculation, the opinions of our author are somewhat different from those entertained by most persons, and we shall conclude this part of our analysis by quoting his opinions in his own words:

"Since the introduction of vaccination, it has been the fashion to decry inoculation, and to impute to it mischief of which it was not guilty. The great objection made to inoculation, and that which recently induced Parliament to abolish it altogether, under heavy penalties, was, that it desseminated

the virus, and multiplied the foci of contagion. Dr. Watkinsun and Dr. Schwenke, in 1777, and more recently, Dr. Adams, broke the force of this argument, by pointing out how important a part epidemic influence plays in the diffusion of variola. Had they lived in our times, how strongly would they have fortified their arguments! We saw, in 1838, an epidemic small-pox raging in London, where inoculation had long been discontinued. The admissions into the Small-Pox Hospital in that year exceeded those of 1781 and of 1796. Inoculation was abolished throughout England and Wales in 1840, and the act has been most rigidly enforced; yet, during the last two years, small-pox has visited every county of England.

"Sir Gilbert Blane has attempted to prove by statistics the evils of inoculation. He has shown that the proportion which the mortality by small-pox in London bore to the general mortality, increased during the last century from seventy-eight to ninety-four per thousand. But various considerations serve to weaken the force of this argument. If, for instance, we divide the last ninety years of the eighteenth century into three periods, we shall find that the recorded deaths by small-pox were as follow: 1711 to 1740 (when there was no inoculation), 55,383; 1741 to 1770 (when inoculation was coming into general use), 63,308; 1771 to 1800 (when inoculation was almost universal), the deaths were only 57,268; so that, by this showing, inoculation diminished the mortality by 8,115 lives!

"Statistics are very useful, and deservedly carry great weight with them; but they may be enlisted, with a little management, on both sides of an argument.

"One subject only remains for our consideration, and that is, the question, whether any circumstances would still warrant us in recommending inoculation on scientific principles? Concurring most cordially in opinion that the practice of inoculation by *unqualified* persons ought to have been put down (not in 1840, but forty years before that) by stringent legislative enactments, I still remain of opinion that under several circumstances it is the duty of a medical man to recommend inoculation. These circumstances do not, indeed, often occur; but the legislature would hardly wish to control and fetter, even in a single case, the deliberate judgment of a physician, acting for the benefit of his patient. I will name to you four of these cases: 1. When a person has been found, from peculiarity of habit, unsusceptible of vaccination. 2. When new sources of vaccine lymph are introduced, and it

becomes of importance to ascertain that the new virus is efficient. 3. When young persons (between the ages of ten and twenty), vaccinated in early life, are proceeding as cadets to India. 4. When small-pox unexpectedly breaks out in a country district, at a time when (even with the facilities of a penny post) vaccine virus is not to be obtained.

"Other cases, equally strong, might be put; but what I have said will probably suffice to show that a clause (duly guarded against abuse) permitting qualified medical practitioners to inoculate under circumstances of urgency, would have been a useful addition to the Vaccination Extension Bill. That it was not so added was no fault of mine."—*Lon. Med. Gaz.*, Oct. 27, 1843.

Vital Statistics of Sheffield.—One of the most prosperous trades in Sheffield is the silver plated manufacture. Until the last two years it has not shared the distress experienced by all engaged in making cutlery. The workmen belonging to this branch amount to 400, and form several unions, the restrictive laws of which are effective, even in times of bad trade. The earnings of men vary from 18 to 42 shillings, and of women from 8 to 15 shillings a week.

The workmen in this manufacture are sober, intelligent, and steady, and are, or were, in tolerable circumstances. This is attributable to various causes. First, the rule of the trades' union, which prohibits the masters from taking apprentices, has reduced the number of workmen, formerly superabundant. Secondly, the expensive materials and tools used in this trade, prevent that sudden conversion of men into masters which is so common in so many other occupations. Thirdly, children are rarely employed in this trade, much under fourteen years of age. Fourthly, the workmen are not liable to be thrown out of employment by machinery. This occupation is neither particularly detrimental to health nor conducive to longevity. In the Silversmith's Benefit Society, the mean age attained by those who die above the age of 40 is 59.12; while among the working classes, generally, of Manchester, Leeds, and Liverpool, it is 58-97; so that the advantage in favor of the silversmiths is slight indeed. In rural districts the mean age attained by persons above 40, is 68.76. What a difference!

Next come the *saw manufacturers.*

"The workmen in this branch of trade are, perhaps, in no

degree inferior in intelligence, sobriety, and general good conduct, to those in the manufacture of which we have just treated. They have both, equally, their respective unions, which regulate wages, the introduction of apprentices, and which, in time of sickness, afford a weekly allowance."

In the branch called *par excellence* saw making, there are 208 journeymen, of whom about 20 are not in the union; 130 boys—being, indeed, more than the rules of the union allow; and about one woman or girl to every eight men.

Nine-tenths of the men are in sick clubs; nineteen out of twenty can read and write; and their average wages are 28 shillings a week, the extremes being 24 shillings and 45 shillings.

The *saw grinders* are fine healthy men, who generally live in the country, and often add the cultivation of a plot of ground, or even a small farm, to their mechanical occupation. They are peculiarly liable to accidents, and of 42 saw grinders who have died since 1821, 5 were killed by the breaking of stones.

Dr. Holland gives a list of 13 accidents, being a part of those which have happened to 78 living members in the union. Most of them are very serious, *e. g.* "3. Drawn over the stone; severe hurt; in bed nine months." "9. Arm severely lacerated; lame three months."

The *edge-tool makers* are well paid, but are a less intelligent class than those previously mentioned. The number of *foremen* and *strikers* is equal in this trade; the former are said to earn, on the average, £1. 14s., and the latter £1. 2s. a week.

The account is furnished by a manufacturer, and, though no doubt accurate as far as it goes, is defective in an important point. We do not learn from it how many months in the year the men are at work. The prices have been strictly enforced, even during the last three years, but for what portion of that time have the men obtained them?

Three-fourths of the workmen in this branch are in sick clubs; but only one among five adults can write. Trades that require strong arms rather than acute heads, will be favorable rather to sensuality than intelligence; a blacksmith drinks more than he reasons; and Dr. Holland finds that the forgers of Sheffield have big occiputs, but low, retreating foreheads.

The spring knife makers are badly paid, and badly educated. "A few superior workmen may earn from 30s. to 40s. per week. In the first manufactories of the town the average

is from 16s. to 25s. But in many of the inferior manufactories, the workmen are receiving no more than 12s. or 16s.

Moreover, when Dr. Holland was writing, in June, 1843, this scale of wages was very greatly reduced.

This branch is not in union; not above half of the adults can read, and not one-fourth moderately well; about two-thirds only of the adults are in sick clubs.

Two circumstances combine to depress wages in this department. The most important is the smallness of the capital required to set up as a cutler. A few pounds are sufficient. The other one is the facility which this branch offers for the employment of children at an early age.

The *file trade*, as regards the circumstances of those employed in it, holds a middle place between the silversmiths and saw-makers, who are above, and the spring knife cutlers, who are below them.

The branch of the file trade called *forgers*, consists, like the edge-tool makers, of foremen and strikers; but the profits are more equally divided between the two classes of workmen in the present instance; a foreman averaging £1. 12s. 10d. a week, and a striker £1. 6s. 9d.

As to *file-cutters*, by reference to thirty books of file-cutters, men of *steady* habits, each having the assistance of a boy, the average per week was found to be £1. 18s. 6d. Eighty per cent. of the adults can read, and seventy can write. The proportion among the boys is rather greater; which may either show that education is making way, or that a certain number of adults ferget their little scholastic learning.

The *fork-grinders* carry on the most unwholesome trade in the kingdom. Fork-grinding is always performed on a dry stone, and the clouds of stony and metallic dust produced in the process, clog up the respiratory organs, and cause grinder's asthma, a disease which carries off its victims, in a majority of cases, before the age of thirty!

The better the state of a given trade in Sheffield, says Dr. Holland, the smaller is the proportion of minors employed in it. Thus in the silver-plated branch, the minors are to the adults as 16 to 100; and among the edge-tool makers, 12½ to 100. In the spring knife branch the per centage is about 25; but among the fork-grinders the minors actually out-number the adults, as there are 100 boys to only 97 men!

Of the ninety-seven, about thirty are at this moment suffering from grinder's asthma. It is remarkable that in this destructive trade the men are ill paid, but Dr. Holland does no

say what their wages are. Nor is their education superior to their condition; for of the 197 men and boys, one hundred and nine can only read, and 69 can write.—*London Medical Gazette*, Sept. 8th, 1843.

Poverty of Medical Men: how to eke out a livelihood.—"One of the most certain signs (says a writer in the French Medical Gazette) of the 'decadence' of a profession, is the necessity which many of its members experience to seek for supplementary resources. Medicine is a most noble profession, but in the present day it is certainly one of the worst trades (industries) going. It is all very well to talk of dignity and high feelings; let it be remembered that a doctor has a stomach as well as a heart to attend to. In Paris alone, there are not fewer than 2,000 medical men, and it may be readily supposed that a great number of them scarcely ever get a fee. How, then, are they to live until practice comes?—by turning their talents, whatever these may be, to the best account. The other day I called on a confrère, whose circumstances I knew to be in not a very flourishing condition; I found him busily engaged in painting a portrait; he said that he had sold several of late. But what is your object? said I—'renforcer le metier,' was his answer. If a patient called, he put down his palette, doffed his blouse, slipped on his black coat, and with a grave and becomingly professional countenance, went to his consultation-room; no sooner was the interview over, than he returned to his studio, resumed his working dress, and set to his painting again with all the cheerfulness of a brave heart. 'I could not help saying, Apollo is god of the arts as well as of medicine.'

"Several young medical men have exerted themselves with success in the way of 'inventions industrielles;' for example, in the manufacture of portable liquid gas, in the construction of a night-telegraph, in preserving timber for ship-building, &c.

"The lamp C———, we owe to the ingenuity of an intelligent physician, who is practising in the suburbs, and who thus diffuses both light and health around him.

"Not a few imitate the example of *Boerhaave*, *Pinel*, and others, and give instructions in languages, mathematics, &c., translating, perhaps, Virgil and Horace in the morning to one set of pupils, and Hippocrates and Celsus in the evening to another. Often the wife, too, lends a helping hand 'à renforcer le metier,' either in the way of teaching, letting lodgings,

or perhaps keeping a little magazine of linen, or silk goods, &c.—whatever, in short, that brings grist to the mill!"—*Medico-Chirurgical Review*, for July, 1843.

Professional Success—Gravity versus Hilarity.—Our contemporary of the Gazette has favored the profession with an Essay on Professional Success, which is good in its way, though not exactly after the manner of Dean Swift, nor Rabelais, nor Goldsmith, nor even quite so light as Addison's. But *n'importe*, it inculcates some very sound decorum and morality, and, if somewhat prosy, shares that fault in common with many excellent discourses. But the point to which we intend to allude is one generally discussed by our contemporary—the advantages of seriousness. He observes:

"Seriousness, not occasional but habitual; earnestness, not affected but real, are useful in securing the confidence of the sick, and indispensable in the studies which prepare us for practice; and if the unvarying liveliness of a mercurial temperament, seems, in some instances, to have been a prime element of professional success, we may rely on it that such unwearied cheerfulness has only lightened the labors of conscientious activity; that it has been kept up by a consciousness of duties performed, not used as a substitute for duties neglected. Of those who can set the table in a roar, how many can leave it at the calls of duty?"

True as this may be, it cannot be deemed new, as their very charter designates the members of the College of Physicians "viri *tristes* et docti," and, no doubt, their solemnity stands them in stead. Who has not remarked some learned man, bending over a dubious stool, with a face in which are displayed all that seriousness and earnestness, so powerfully inculcated by our contemporary; and who, at the same time, has not noted the admiration which such philosophical devotedness to the cause of science and his patient, has excited in the attendant mother, or the aunt, or, above all, in the grandmother? The well weighed words, the Burleigh shake, of a professional opinion, as dark as the darkest Delphic oracle, and quite as well suited to whatever may turn up, are part of that gravity which must pervade the sayings and doings of a doctor, and to the uninitiated savour a little of humbug. In fact it is often, in this composite world of ours, difficult to separate the latter abused, but well used, instrument from the "conscientious earnestness" which it represents.

It must be agreed, we think, *nem. con.*, that doctors of physic should be grave, at any rate before their patients. Who, then, is to be lively? for something like fun may surely be permitted to the faculty. We fancy it must be given up to those queer fellows, the surgeons—whose business of passing catheters, tying piles, and curing claps, does not necessarily require such length of visage, or intense profundity of thought. And hence, we suppose it is, that so many of these same surgeons have been chatty, good-humored sorts of men, not indisposed to crack either a bottle or a joke, and have not greatly suffered in the estimation of the world notwithstanding. Far be it from us to defend this. We merely chronicle the fact, and at the present time of day, when to look wise is almost as good as to be so, and to scorn pleasantry is held by many as a certain evidence of mind, we would caution the rising generation against being misled by the lives of such persons as Cooper or Abernethy.—*Medico-Chirurgical Review*, October, 1843.

Dipsopathia,—the latest Medical Humbug.—Extremes meet. The Medico-Chirurgical Review, for Jan. 1844, furnishes the following intelligence:

"Priessnitz has got a rival close to his own castle! About four miles from Graffenberg, in the lovely valley of Lindiviesse, Dr. Schrott, an old school-fellow of the apostle of hydropathy, has started a *cure-all*, in opposition to the Silesian peasant. His methodus medendi is no vile imitation of that of the far-famed practitioner of Graeffenberg. It is a veritable antipous. The one inculcates the drinking of water, and water only. Schrott forbids water and all other fluids—and thus cures by thirst!"

Antagonism of Phthisis and Intermittent Fever.—No such antagonism has been observed by the profession of the United States; but, on the contrary, it is found that the persistence of ague is apt to lead to the development of tubercles in the lungs. Dr. Richardson's paper, in this number, may be referred to for testimony. The following is to the same point:

"Dr. Gouzée, chief physician to the Military Hospital, Ant-

werp, in a note addressed to the editor of the *Gazette Medicale*, says, 'The partizans of this opinion affirm that phthisis is unknown in countries where marsh miasma reigns.' This may be true with some, but certainly is not the case at Antwerp, where, though intermittent fever is endemical, phthisis is very prevalent. Thus, from 1834 to 1842, of 453 deaths at the Military Hospital, 123 were caused by phthisis, or one in three and two-thirds. During the first six months of 1843, of 17 deaths, 9 were from phthisis, or more than one-half, though intermittent fever was more prevalent than usual. Moreover, no doubt can exist as to the nature of the disease, the *post mortem* examination having demonstrated the tubercles. The same remark is applicable to the inhabitants of the town; therefore, the law announced by Dr. Boudin is not without an exception; for, in Antwerp, phthisis and intermittent fever reign simultaneously, and the one does not prevent the development of the other."—*Medical Times*, Dec. 1843.

Toxicological Effects of Sulphate of Quinine.—It has become a prevalent practice in the Southwestern States to employ sulphate of quinine in large doses. We have administered it in doses of 15 grains, at intervals of two hours, until, in one case, the patient took during the day 90 grains. The disease was a malignant intermittent, generally termed congestive fever, and the remedy had the desired effect of preventing the return of the chill, and establishing convalescence. Cases are reported in which much larger doses were given. In a few instances as much as a drachm has been taken at one time. But this practice, it appears, is not without danger.

"M. Melier lately read a memoir to the Academy of Sciences, in which he gave an account of some experiments of Magendie on the effects of poisonous doses of quinine. Dogs were poisoned with this substance, and on dissection distinct fluidity of the blood was observed, and morbid enlargement of the parenchyma of the lungs. M. Melier therefore cautions against the practice of administering the large doses."—*Edinburgh Med. and Surg. Jour.*

Milk injected into the Veins.—M. Donnè, in the course of the past summer, stated to the French Academy of Sciences, that, having been struck with the analogy between the consti-

tution of milk and that of the blood, he had repeated the experiment of injecting the former fluid into the veins of various animals; and his experience, contrary to that of former observers, went to prove that those animals (except, from some unascertained cause, the horse), not only supported the operation without injury, but that the globules of milk served the purpose of those of chyle, and became eventually transformed into blood globules.—*Lancet*, from *Gazette des Hôpitaux.*

Purification of the Air without renewing it.—The *Courier Français* states that a most curious experiment has been lately made in the hospital of the Salpetriére at Paris with a machine invented by Dr. Payerne, called the purifier, the object of which is to purify the air, without renewing it, in hospitals, prisons, mines, diving bells, and, in general, in all places where the air has been vitiated. This experiment, which excited the greatest interest from the important results to be derived from its success, was witnessed by deputies from the Academy of Sciences, the Administration of Hospitals, and by several distinguished chemists and physicians. Dr. Payerne entirely succeeded in what he proposed, viz: to purify the air completely in an enclosed space without communication with the external air. The thermometer, at the same time, descended several degrees. Dr. Payerne proposes, in a few days, to make an experiment with his machine on a diving bell in the Seine, by which the divers may remain an indefinite time under water without communication with the atmospheric air.—*London Med. Gaz.*, Nov. 1843.

Fair at the New York State Lunatic Asylum.—A fair, as we learn by the Utica papers, was held at the Lunatic Asylum, in that city, on the 18th.

"The table was spread in the lower hall of the eastern wing, and extended about two-thirds of its entire length, which is some 250 feet. Most of the patients' rooms on that floor were thrown open, and all the inmates of the Asylum who were in sufficient health, were permitted to mingle with the gay and busy throng from the outer world which crowded the hall. Among those actively engaged in the management of the fair, the distinguished female philanthropist, Miss Dix, who, in the prosecution of her benevolent labors, has been for some weeks a visitor at the Asylum, attracted much attention.

"This is the first thing of the sort, we presume, ever attempted within the walls of a lunatic asylum. We trust it may prove the source of as much benefit to the inmates as it was of pleasure to the visitors. The public are much indebted to the able superintendent, Dr. Brigham, and the other officers of the institution, for arrangements and attentions which made the whole affair pass off in the most agreeable manner.

"We learn that a fund of about $200 has been realized from the fair, which will be expended for books, musical instruments, &c. It was a source of much amusement to the patients, and its beneficial effects are strikingly apparent with some of them. We are further informed that some dozen of the patients are writing accounts of the fair, but it is not known whether their productions are intended for 'the public eye.'"

Mortality of Boston in 1843.—An unusual degree of good health characterized our city the past year. No raging epidemic prevailed, either to alarm the people or sweep off the multitude to a premature grave. The whole number of deaths was 2,197—which was by no means large, in proportion to the population, now believed to be considerably above one hundred thousand. Some of the prominent causes of mortality were as follows, viz: consumption, 249; diseases of the bowels, 65; dropsy of the brain, 85; typhus fever, 72; scarlet fever, 108; infantile diseases, 142; stillborn, 189; measles, 43; inflammation of the lungs, 59; diseases of the heart, 34; convulsions, 50; croup, 52; small-pox, 53.

There is extreme care taken by the city authorities in maintaining an admirable system of street cleanliness; and so long as the same efforts are made to preserve the public health, Boston, we may hope, will continue to be distinguished for its freedom from those pestilential scourges, which occasionally sweep off multitudes in our southern cities.—*Boston Med. and Serg. Journal*, Jan. 1844.

Castration performed on the Patient by Himself.—An old gentleman, having suffered most excruciating pain with a scirrhous testicle, one night, when alone, was maddened to such a degree with pain that he took hold of the spermatic cord with the finger and thumb of the left hand, caught the

testicle in the right hand, and commenced twisting, and he continued till he severed it. He told me himself it took fifteen rounds hard work. No hæmorrhage naturally followed, nor did any other bad symptom.—*Med. Times.*

Treatment of Hooping-Cough by Cochineal.—Dr. Cajitan Wacht, of Vienna, has treated nine children affected with hooping-cough, by cochineal, which has been already used for that purpose by English physicians. The medicine has been administered in every stage of the disorder, and its efficacy has been so very instantaneous, so constant, that notwithstanding the small number of cases Mr. Wacht had, he believes himself authorized to announce cochineal a specific in hooping-cough. The following is the mixture he used:

Cochineal, - - -	10 decigrammes.
Sugar, - - - -	32 grammes,
Warm water, - -	192 grammes.

Dissolve. Dose, 3 teaspoonfuls during the 24 hours.

It should not be used after it has been made thirty-six hours, decomposition having then commenced.—*Journ. de. Med.*

Note by Translator.—The mixture commonly used in this country is formed of cochineal, ʒj.; salt of tartar, ʒij.; water, 4 oz.; dose, a teaspoonful. From Mr. Wacht's statement above given, it would appear that its agency in the cure of hooping cough, is due to the cochineal alone.—*American Journal of Pharmacy*, Jan., 1844.

THE WESTERN JOURNAL.

NEW SERIES.—VOL. I.—NO. II.

LOUISVILLE, FEBRUARY 1, 1844.

JARVIS ON INSANITY.

"Insanity among the colored population of the Free States," is the title of an article in the January number of the American Journal of the Medical Sciences, which has been published in a separate form, and of which we are indebted for a copy to the politeness of the author. Dr. Jarvis is known to the readers of the Western Journal as the author of some valuable papers on the Lunatic Asylums of the United States. He has been industrious in collecting the statistics of insanity in this country, and the pamphlet before us brings to light some curious facts, not, indeed, in relation to insanity, but touching the character of the sixth census as it respects the prevalence of mental disorder among the different classes of our population.

The impression made by the details of the sixth census concerning the existence of insanity in this country, and especially among the two races, will be remembered. The statement, that slavery was proved by the experience of our country to be tenfold more favorable to mental health than freedom, was not likely to escape the

severest examination. Dr. Jarvis has sifted the evidence on which it rests, with his characteristic patience, and the result is given in the paper before us. He finds the sixth census to abound in errors—shows that colored lunatics are set down for places where not a single individual of the African race is to be found—in a word, that the document, so far as the statistics of insanity are concerned, is "a bearer of falsehood to confuse and mislead." "In many towns *all* the colored population are stated to be insane, in very many others, two-thirds; one-half, one-fourth, or one-tenth of this ill-stared race are reported to be thus afflicted, and as if the document delighted to revel in error, every proportion of the negro population from sevenfold its whole number to less than a two-thousandth, is declared to be lunatic." Dr. Jarvis shows all this in tables which he has made out from the census.

Thus, in Shelby, New York, the total colored inhabitants is stated to be 1—the colored insane 7. The negroes in Worcester, Massachusetts, are 151 in number, 36 of whom are under 10 years of age; yet the census makes out 133 colored insane in that town. In Athens, Vermont, the black population is 2, and both are reported insane. Freetown, Leominster, Wilmington, Sterling, and Danvers, in Massachusetts, are reported by the census as destitute of a black population, but yet this queer document contrives to get two colored insane into each of these places. Plympton, in the same commonwealth, has two free blacks, according to the census, and twice the number of colored lunatics. Waterford in Connecticut, is still more unfortunate—her black population, amounting to 2, furnishes 7 lunatics! Providence, N. Y., has 3 colored inhabitants, of whom two are insane, and two both *deaf and dumb;* and Dryden, in the same State, reported to have no colored inhabitants, is set down as containing two colored insane, and also "two blind negroes!" But the most astonishing prevalence of insanity among the poor blacks, is reported at Washington, in Pickaway county, Ohio, where the colored inhabitants are set down in the census at 0, and the colored insane at 7!

Well may Dr. Jarvis say, in view of these errors, "we are disappointed, we are mortified." He commends the matter to the attention of Congress. He suggests that the original papers respecting the sixth census be revised, by which all the errors made in copying may be corrected. Y.

A NEW MEDICAL JOURNAL.

Drs. Fenner & Hester propose publishing, in New Orleans, a quarterly journal of Medicine, the first number to be issued on the 1st of May next. Each number is to contain about 200 pages, and to consist of original communications, reports from the New Orleans hospitals and infirmaries, a periscope of practical medicine, and brief notices of recent medical literature. The city of New Orleans affords many advantages for the publication of a journal of practical medicine, and we hope the proposed undertaking may be successful in developing them. A report of the doings of the profession in that great city, could not fail to be interesting to their brethren in other parts of the world. The terms of the "New Orleans Medical Journal" are $5 per annum, payable in advance.

Y.

NASHVILLE MEDICAL SCHOOL.

The Trustees of the Nashville University are about to organize a Medical Department in that distinguished institution. We have heard the names of several of our medical friends mentioned in connexion with the various professorships, but, so far as we have heard, no elections have yet been made. Nor, we believe, is the time yet fixed for putting the school into operation. We presume, however, that an announcement by the Trustees may be looked for soon.

Y.

PROFESSOR LITTON'S INTRODUCTORY.

This is a glowing discourse by Professor Litton, pronounced before the Medical Class of the St. Louis University, at the beginning of the lectures in November last. Dr. Litton is a scholar and a chemist of high promise, and the zeal which he displays in his introductory lecture is a guaranty for the fulfilment of all the hopes of his friends. He pleads the cause of science like a true votary.

His mind and heart are full of its beauty and its value. He invokes the commercial spirit of St. Louis to rear up a chemical school in that growing metropolis, which shall vie with the renowned institutions of other lands. A pupil of the great chemist of Giessen, Dr. Litton is animated by all his master's devotion to chemical science. We hope his appeals to the munificence of his fellow-citizens may not be made in vain. Y.

MEDICAL ETHICS.

Professor Harrison, of Cincinnati, has favored the profession with an excellent lecture on the subject of *Medical Ethics*. The profession needs many such lectures. They ought to be delivered all over the country. We ought to have line upon line—precept upon precept. The good lessons ought to be repeated continually. Dr. Harrison's lecture would form a good manual on the *duties of physicians*. We hope it will be circulated widely, for we are sure the principles so happily enforced in it cannot be contemplated without profit. Y.

MEDICAL COLLEGE OF LOUISIANA.

In a notice of this institution, contained in one of the Travelling Editorials of the Senior Editor, under date of March last, it is said: "The lectures are delivered in a rented house, but the Professors have begun the creation of a fund for the erection of an appropriate edifice." Since this was written, a commodious Medical Hall has been erected, and is now occupied by the Faculty. It gives us the greater pleasure to notice this fact, as it is the result solely of individual enterprise. Neither the State nor the city authorities lent their aid. Several physicians, however, unconnected with the institution, and some of the private citizens, showed a praiseworthy liberality, by valuable donations to the library and museum. We trust the expectations of all its friends may be realized, and that the Faculty may reap their reward both in emoluments and honors. C.

RUSH MEDICAL COLLEGE, CHICAGO.

The Mississippi Valley is remarkable for many things, but will soon be as much so for its medical colleges as for aught else. These multiply astonishingly. They grow as rapidly as Jonah's gourd. One lies down at night to rest from a hard day's toil, and after a deep sleep, such as fell upon Adam, he wakes, and lo! by his side is a medical college, "complete from turret to foundation-stone." They come not singly merely, but by twos and threes—in populous cities, and amid "populous solitudes of bees and birds" as well. Not quicker or more sudden did Roderic Dhu's archers, at blast of bugle-horn, start up from rock and tree, than do these institutions appear at trumpet or even penny-whistle call of some aspiring grandson of Apollo. With one flourish of the serpent-bound staff of him worshipped

> In Argolis, beside the echoing sea,

they come, thick-clustering over the land,

> As when the potent rod
> Of Amram's son, in Egypt's evil day
> Wav'd round the coast, up-call'd a pitchy cloud
> Of locusts.

We have now a complete chain of them, enough to make a veritable *cordon sanitaire*. Disease is hemmed in—is "cabined, cribbed, confined"—and can have neither egress nor ingress without challenge from trusty sentinel. Tracing them on the map, they make a figure resembling an ill-shaped battledoor. Beginning with that at New Orleans, where, as stated in another paragraph, a new college building is just completed, we go to St. Louis and find two more; next to Jacksonville where there is a fourth; then to Chicago and count a fifth; turning thence down the lake shore, we find a sixth at Laporte; proceeding to the southern shore of Lake Erie, Cleveland gives us a seventh, and Willoughby, eighteen miles distant, an eighth; crossing the country and following the Ohio, Cincinnati gives the ninth; a *detour* to Lexington and we have a tenth; Louisville makes the eleventh; another *detour* to Nashville, completes the dozen; and if we count one that is in a formative stage at Madison, Indiana, we have a clean baker's dozen. Seven States, containing 13 medical colleges, some of which are almost within call of each other!

The youngest of these, is the ***Rush Medical College,*** at Chicago—a city which 12 years ago was a fur-trading establishment, and now contains some thousands of inhabitants. The charter of the college dates from March, 1837, but no organization took place until the past autumn. In October the present faculty was appointed; at a subsequent period, means were provided to defray the expenses of a chemical apparatus and dispensary; and the first session of the college opened on the 4th December last. The following gentlemen compose the faculty: Daniel Brainard, M.D., Professor of Anatomy and Surgery; James V. Z. Blaney, M.D., Professor of Chemistry and Materia Medica; John M'Lean, M.D., Professor of Theory and Practice of Medicine; and M. L. Knapp, M. D., Professor of Obstetrics, and Diseases of Women and children. Dr. Brainard lately filled with great credit the chair of Anatomy in the University of St. Louis. Dr. Blaney, though young, is full of talent, and has that enthusiasm in his profession so necessary to a teacher, and which cannot fail of success. Of the other gentlemen we know nothing, but doubt not they are every way worthy their two colleagues.

Of Dr. Brainard's excellent address, delivered at the opening of the college, we shall say nothing now. We have laid it aside with a number of others, which, at some favorable moment, we intend to take up and *eviscerate* for the edification and instruction of our readers. The best wish that we can give him and the Rush Medical College (and we give it heartily) is, that the spirit of the great man whose name it bears, may rest and remain with them. C.

A NEW LIFE-PRESERVER.

Our friend, Dr. L. H. Mosby, has invented a *life-preserver* which strikes us as superior to anything of the sort ever yet proposed. It consists of a tin box rendered air-tight, which is to be fitted to the bottoms of the chairs on steam boats, and which, without being in the way, will form a buoy, always at hand, upon which several persons might float in case of accident. It is at once cheap, simple and efficient, and we have no doubt, will soon be found in use on all our steam boats. Dr. Mosby has taken out a patent for it. Y.

MEDICAL CLASSES.

In our last number, we gave the reputed size of the classes at several of the medical schools in the west. From our contemporaries beyond the mountains, we learn, that the Atlantic Schools are fuller than usual. The lecture term recently closed in the Geneva Medical College with a Class of from 150 to 180 A writer in the Boston Medical and Surgical Journal reports about 500 students at the two schools in New York city, and 600 in the two Philadelphia schools. This statement is confirmed by the editor of the Medical Examiner, who says, "at the two schools in Philadelphia the number of students is greater than at any former season. The University of Pennsylvania has more than her average class, and the number at the Jefferson Medical College exceeds that of last year, by nearly one hundred." Y.

MESMERISM.

Mesmerism seems to have over-run the land. The marvellous feats, of which we heard so much from foreign parts, a few years since, are now daily performed in all the towns and villages of our country. "Such things o'ercome us like a summer's cloud," not, however, without exciting the "special wonder" of the people. A body of scientific gentlemen, in this city, performed a series of experiments, a few weeks ago, intended to test the reality of the mental sympathy, alleged to exist between the *mesmerisee* and the persons in communication with her. The report of these experiments will be published in our next number. The facts which it sets forth make a curious mass of evidence on the subject, which may enable those who are still in doubt, to form some judgment touching the pretensions of this "science." Y.

MEDICAL INSTITUTE OF LOUISVILLE.

We expect to be enabled to announce some important changes in the organization of this institution in our March number. Dr. Cooke,

the venerable professor of Theory and Practice, having signified to the Board of Managers his determination to retire from the school, at the close of the present session, the Board contemplate reducing the number of chairs to seven. Professor Cooke has been confined to his house in the country, for many weeks, with severe indisposition. He is now, however, we are happy to be able to inform his many friends, convalescent. His complaint was pleurisy. Y.

TO CORRESPONDENTS, &c.

Dr. Drake expects to commence a second tour through the States of Louisiana, Florida, Mississippi and Alabama, early in the spring, in the prosecution of his design of investigating the diseases of the south-west in the localities where they appear. He will receive and forward communications for the Journal. Drs. Yandell and Colescott will remain in Louisville during the summer, where they may be addressed by their correspondents. All business communications to be addressed to the publishers, Messrs. Prentice & Weissinger. Y.

WESTERN JOURNAL.

The delay incident to the procuring of new type is the cause of the late appearance of this and the previous number of our Journal, but our March number will be issued in better time, and thereafter we expect to be able to get the work out punctually at the beginning of the month. We are resolved on setting our subscribers a worthy example of punctuality. Let them emulate it, and the Journal will be placed beyond the reach of any contingency.

THE

WESTERN JOURNAL

OF

MEDICINE AND SURGERY.

EDITORS.

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DANIEL DRAKE, M. D.,

PROFESSOR OF PATHOLOGY AND THE PRACTICE OF MEDICINE
IN THE MEDICAL INSTITUTE OF LOUISVILLE:

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PROFESSOR OF CHEMISTRY AND PHARMACY IN THE SAME:

THOMAS W. COLESCOTT, M. D.

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